REPORT OF ALBERTA'S

ENDANGERED SPECIES CONSERVATION COMMITTEE

JUNE 2002

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For copies of this report, contact:

Information Centre – Publications
Alberta Environment / Alberta Sustainable Resource Development
Main Floor, Great West Life Building
9920 - 108 Street
Edmonton, Alberta
Canada
T5K 2M4
Telephone: (780) 422-2079

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WRITING/EDITING: Edrea Daniel, Robin Gutsell, Dawn Birn, Nyree Sharp, Dave Ealey

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Message from the Minister

The efforts and progress of the Endangered Species Conservation Committee (ESCC) clearly show Alberta is a leader at working for the future of its vulnerable species. The province's "at risk" species face many challenges – the committee helps develop meaningful solutions with its practical input and review.

The people of the ESCC and its Scientific Subcommittee are to be commended for the tremendous commitment they make. The quality and timeliness of their input is exceptional. The advice and recommendations that I receive from the ESCC are well-prepared. I see reflected in them the broad diversity and many values of Albertans, as represented by various sectors on the committee.

I wish to recognize the continuing role that Ivan Strang, MLA West Yellowhead, has played as the ESCC chair, a position he has held since the creation of the ESCC in 1998. With the members' cooperation, he blends the contributions of scientists and stakeholders to achieve the best of results.

As Alberta moves forward in its efforts to ensure our natural resources can be used and managed sustainably, it's important that we pay attention to our unique and sensitive wild species in a balanced way. I look forward to continuing to work with the committee in achieving that balance.

Included in the many successes of the ESCC, as described in this progress report, are tremendous advances that have been made in recovery planning. This is particularly so for the creation of recovery plans for the piping plover and the western blue flag as the first provincial recovery plans to be reviewed by the ESCC.

There is a role for all Albertans to participate in the recovery of species at risk. The stories in this report show how essential public cooperation is to achieve success with our provincial recovery efforts.

M. Cardinal

HON. MIKE CARDINAL

HON. MIKE CARDINAL
MINISTER OF SUSTAINABLE RESOURCE DEVELOPMENT

"The province's 'at risk' species face many challenges – the committee helps develop meaningful solutions with its practical input and review."

IVAN STRANG
MLA WEST YELLOWHEAD

Message from the Chair

I feel privileged to represent the diverse membership of the Endangered Species Conservation Committee (ESCC) in introducing this progress report on species at risk activities. This is one way in which we can be accountable to Albertans for our efforts on their behalf.

It's very satisfying to help build something and watch it stand the test of time. As a result of start-up funding for a number of species at risk initiatives, the department established, over a couple of years, a strong framework for its species at risk programming. This framework has enabled the committee to make a good number of recommendations and make some headway toward recovery of species. The proof is in the success stories described herein.

The Alberta approach adapts, for use at a regional level, the assessment criteria that are used at national and international (World Conservation Union) levels. Based on these criteria, the Scientific Subcommittee supports the ESCC with independent, scientific assessments of a high calibre. Then the ESCC, as a stakeholder committee unique in all of Canada, takes these assessments and adds value, not special interest. We then submit our recommendations to the Minister of Sustainable Resource Development.

In communicating with the Minister, the committee has been impressed with his willingness to listen to our points and to consider fully our submissions. I am pleased to note that well over 90 per cent of the recommendations submitted by the ESCC have been accepted, which is a most impressive record. We are ready to work with the Minister and the department toward fulfilling our mandate as we address further species.

My thanks go to the hard-working committee members and Scientific Subcommittee members. Your commitment to this task of bettering the condition of Alberta's "at risk" species is unwavering. Albertans and the species themselves are well served by your efforts.

IVAN STRANG

"The Scientific Subcommittee supports the ESCC with independent, scientific assessments of a high calibre. Then the ESCC takes these assessments and adds value."

Alberta and Its Species at Risk

BEAVER LAKE

Alberta has a rich natural heritage. The province has hundreds of species of vertebrate animals, and thousands of species of plants and invertebrates, whose populations are healthy and stable. However, the populations of some wild species have decreased to such an extent that they can no longer sustain themselves. Other species are in danger of reaching this point.

In response, the Alberta government has developed a process to prevent "species at risk" from becoming extinct or extirpated. The approach is innovative and practical, and brings broad social and economic values into the process. It is also cooperative and collaborative, with the solid backing of provincial legislation (the *Wildlife Act*). The process relies on sound science plus a realistic understanding of land use and land management, both of which are needed for the effective management and recovery of species at risk.

The Alberta approach relies upon the activities of the Endangered Species Conservation Committee (ESCC) and its scientific arm, the Scientific Subcommittee, both created under the auspices of the *Wildlife Act* in 1998.

The main role of the ESCC is to advise the Minister of Sustainable Resource Development on matters related to the identification, conservation and recovery of species at risk in Alberta. Its specific functions are as follows:

- to recommend the necessary legal designation and protections for threatened and endangered species in Alberta;
- to facilitate the planning and implementation of conservation programs and recovery plans for species at risk; and
- to recommend actions that will prevent species from becoming at risk in the future.

Appendix 1 provides the Policy Statement of the ESCC.

The Scientific Subcommittee is an independent subcommittee of the ESCC. Its purpose is to study the scientific information available on species identified as potentially at risk in Alberta. The Scientific Subcommittee provides the ESCC with its analysis of the biological status of a wild species and recommends an appropriate status designation. It may also suggest immediate actions that need to be taken to protect the species. The ESCC considers and includes the subcommittee's assessment when it submits its advice to the Minister of Sustainable Resource Development.

The creation of the ESCC has added a new dimension to the ongoing process of species assessment carried out in Alberta. The result has been clear identification of species at risk and the timely development of recovery plans and management programs for these species.

Definitions Used by the Endangered Species Conservation Committee

Species at Risk: A species at risk of extinction or extirpation (endangered or threatened), or a species that needs special management attention to prevent it from becoming at risk.

Extinct: A species that no longer exists.

Extirpated: A species no longer existing in the wild in Alberta but occurring elsewhere in the wild.

Endangered: A species facing imminent extirpation or extinction.

Threatened: A species likely to become endangered if limiting factors are not reversed.

Species of Special Concern: A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.

Data Deficient: A species for which there is insufficient scientific information to support status designation.

These definitions are based on those used by The Committee on the Status of Endangered Wildlife in Canada (COSEWIC - see page 16). For more information see the COSEWIC website <http://www.cosewic.gc.ca>.

SWIFT FOX
ENDANGERED STATUS IN ALBERTA

For more information about these organizations, visit their websites, which are listed on the inside back cover.

Alberta's Endangered Species Conservation Committee

Alberta's Endangered Species Conservation Committee (ESCC) held its first meeting in September 1998. Meeting quarterly, it makes decisions usually by consensus but can resolve matters using a two-thirds majority when consensus is not possible. The committee's Chair, Ivan Strang, MLA for West Yellowhead, was appointed in 1998 by a Minister of then-Alberta Environmental Protection.

The Alberta approach to assisting species at risk involves using both scientific expertise and the knowledge of those who own, manage or use the land on which wild species depend. Therefore, the ESCC includes members of the scientific/academic community (apart from the Scientific Subcommittee), plus representatives of organizations that are land use managers, resource users, conservation groups and government departments. By including all these stakeholders, the committee is better able to develop workable conservation management programs and recovery plans for species at risk. The ESCC consists of the following individuals and organizations (member organizations are listed in alphabetical order):

Chair

Ivan Strang, MLA for West Yellowhead

Members

Alberta Association of Municipal Districts and Counties

Alberta Beef Producers

Alberta Fish and Game Association

Alberta Forest Products Association
(2 MEMBERS)

Alberta Irrigation Projects Association

Alberta Native Plant Council

Alberta Sustainable Resource Development

Calgary Zoo

Canadian Association of Petroleum Producers

Federation of Alberta Naturalists

Special Areas Board

The Wildlife Society - Alberta Chapter

Treaty 8 First Nations of Alberta

University of Alberta
(DEPT. OF BIOLOGICAL SCIENCES)

University of Calgary
(DEPT. OF BIOLOGICAL SCIENCES)

Western Stock Growers' Association

Ex-officio Representatives

Alberta Agriculture, Food and Rural Development

Alberta Conservation Association

Alberta Energy

The Chair and Ex-officio Representatives do not vote. All other members have one vote.

Achievements of Alberta's Endangered Species Conservation Committee

Alberta's Endangered Species Conservation Committee has been meeting since September 1998 and has accomplished a great deal in its short tenure. Between June 2000 and June 2002, it has achieved the following:

- received 21 new assessments carried out by the Scientific Subcommittee (30 species have been evaluated since 1999);
- passed recommendations concerning the legal designation, management and recovery of all of these species to the Minister of Sustainable Resource Development (the Minister has responded and initiated action on all 30 species);
- facilitated the planning, review and implementation of recovery plans for endangered and threatened species, including assisting stakeholders to participate in the process;
- reviewed and facilitated public input into three draft recovery plans;
- discussed Alberta's *Wildlife Act* and areas where regulations and legislation could be improved or enhanced to improve Alberta's approach to efficient management of Species at Risk; and
- made recommendations regarding the standard actions to be taken following status designation at each level (endangered, threatened, species of special concern, data deficient).

SPECIES ASSESSED BY ALBERTA'S ENDANGERED SPECIES CONSERVATION COMMITTEE BETWEEN SEPTEMBER 1998 AND JUNE 2002

ENDANGERED SPECIES

1 | Sage grouse (*Centrocercus urophasianus*)
2 | Swift fox (*Vulpes velox*)
3 | Piping plover (*Charadrius melodus*)
4 | Ord's kangaroo rat (*Dipodomys ordii*)
5 | Whooping crane (*Grus americana*)

THREATENED SPECIES

1 | Peregrine falcon (*Falco peregrinus*)
2 | Burrowing owl (*Athene cunicularia*)
3 | Woodland caribou (*Rangifer tarandus caribou*)
4 | Trumpeter swan (*Cygnus buccinator*)

SPECIES OF SPECIAL CONCERN

1 | Sprague's pipit (*Anthus spragueii*)
2 | Long-toed salamander (*Ambystoma macrodactylum*)
3 | Long-billed curlew (*Numenius americanus*)
4 | Loggerhead shrike (*Lanius ludovicianus*)
5 | Black-throated green warbler (*Dendroica virens*)
6 | Harlequin duck (*Histrionicus histrionicus*)
7 | Bull trout (*Salvelinus confluentus*)

DATA DEFICIENT SPECIES

1 | Prairie rattlesnake (*Crotalus viridis*)
2 | Wolverine (*Gulo gulo*)
3 | Pygmy whitefish (*Prosopium coulteri*)
4 | Great Plains toad (*Bufo cognatus*)
5 | Canadian toad (*Bufo hemiophrys*)

NOT AT RISK SPECIES

1 | Red-tailed chipmunk (*Tamias ruficaudus*)

IN PROCESS

1 | Western blue flag (*Iris missouriensis*)[1]
2 | Western spiderwort (*Tradescantia occidentalis*)[1]
3 | Ferruginous hawk (*Buteo regalis*)[2]
4 | Grizzly bear (*Ursus arctos*)
5 | Cape May warbler (*Dendroica tigrina*)
6 | Bay-breasted warbler (*Dendroica castanea*)
7 | Soapweed (*Yucca glauca*)[1]
8 | Yucca moth (*Tegeticula yuccasella*)[1]

[1] New regulations for the protection of plant and invertebrate species are being developed so that the listing process can be completed for these species.

[2] Currently designated as threatened, re-evaluation on hold pending collection of additional data on population trends.

Future Activities of Alberta's Endangered Species Conservation Committee

In the next two years Alberta's Endangered Species Conservation Committee intends to accomplish the following:

- continue ongoing assessments of species potentially at risk in Alberta (optimum is three species per meeting) and make its recommendations about these species to the Minister of Sustainable Resource Development;
- continue to facilitate the planning, review and implementation of recovery plans for endangered and threatened species, including assisting stakeholders to participate in the process; and
- continue to review and facilitate public input into draft recovery plans.

The Scientific Subcommittee of Alberta's Endangered Species Conservation Committee

RESEARCHER ABOUT TO RELEASE ORD'S KANGAROO RAT

The Scientific Subcommittee is made up of independent scientists who review the best scientific information available on a species that may be at risk in Alberta.

The Scientific Subcommittee is made up of independent scientists who review the best scientific information available on a species that may be at risk in Alberta and assess what the biological status of that species is in the province. The subcommittee sends its assessment and related recommendations to the Endangered Species Conservation Committee.

The Scientific Subcommittee has adopted the species evaluation method used by the IUCN[1] (now the World Conservation Union, formerly the International Union for the Conservation of Nature and Natural Resources). This method is the same as that used by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) at the national level, and using it ensures that Alberta's assessments can be compared with those done nationally. As well, having an internationally accepted, open and transparent process of evaluation enhances the credibility of the scientific assessments.

When evaluating a species, the Scientific Subcommittee considers a range of information about the species' status in Alberta. Population size, changes in population size, and the size of the area in which the species occurs are very significant. Other population characteristics, such as fragmentation, isolation and status in adjacent regions are also considered before the subcommittee recommends a status.

The present Scientific Subcommittee is composed of a small group of scientists with significant expertise related to vertebrate animals (including mammals, amphibians, reptiles, birds and fish), invertebrates (including insects and spiders) and vascular and nonvascular plants, as well as in the general fields of biology, botany, ecology, forestry, population genetics, wildlife management and wildlife conservation.

Members of the Scientific Subcommittee (in alphabetical order) are as follows:

Dr. René J. Belland, Director of Research, Devonian Botanic Garden, Edmonton, Alberta.

Cheryl Bradley, Professional Biological Consultant, Lethbridge, Alberta was a member of the Scientific Subcommittee until October 2002, when she resigned.

Dr. David Gummer, Curator of Mammalogy, Provincial Museum of Alberta, Edmonton, Alberta.

Dr. Brett Purdy, Department of Renewable Resources, University of Alberta, Edmonton, Alberta.

Dr. Fiona Schmiegelow (Subcommittee Chair), Assistant Professor, Department of Renewable Resources, University of Alberta, Edmonton, Alberta.

Dr. John Spence, Professor, Department of Biological Sciences, University of Alberta, Edmonton, Alberta.

Mark Steinhilber, Curator of Ichthyology and Herpetology, Provincial Museum of Alberta, Edmonton, Alberta.

William D. Wishart, Retired Section Head, Wildlife Research, Alberta Fish and Wildlife; now Adjunct Professor, Department of Biological Sciences, University of Alberta, and Research Associate, Provincial Museum of Alberta, Edmonton, Alberta.

[1] The World Conservation Union has kept its former acronym—IUCN.

Achievements of the Scientific Subcommittee of Alberta's Endangered Species Conservation Committee

The Scientific Subcommittee has been meeting since January 1999 and between June 2000 and June 2002, can be credited with the following accomplishments:

- considered and accepted the revised 2001 IUCN guidelines for assessment of species at risk;
- evaluated 21 new species (30 species have been evaluated since 1999) and provided its recommendations for these species to the Endangered Species Conservation Committee; and
- developed a system for setting priorities for data collection and detailed status report production with particular reference to vascular plant species at risk.

Future Activities of the Scientific Subcommittee of Alberta's Endangered Species Conservation Committee

Over the next two years, the Scientific Subcommittee will be completing the following activities:

- continue to evaluate species potentially at risk in Alberta and pass on its recommendations to the Endangered Species Conservation Committee;
- continue to refine the priority-setting system for application to other taxonomic groups such as invertebrates; and
- expand its membership as needed.

SPECIES CURRENTLY LISTED UNDER THE *WILDLIFE ACT*, AND NEW SPECIES ASSESSED BY THE ENDANGERED SPECIES CONSERVATION COMMITTEE SINCE ITS INCEPTION

Species	Former Designation (1998)	Recommendations SSC	Recommendations ESCC	Current Designation (June 2002)	Recovery Team Formed	Recovery/ Management Plan Drafted	Rec. Plan Approved by Minister
ENDANGERED (2000)							
Sage grouse (*Centrocercus urophasianus*)	GA	EN Jun-99	EN Jul-99	EN	(Ntl)[2] Nov-97 [(Prov) Jan-03][3]	(Ntl) Aug-01 [*IP*]	(Ntl) Sep-01
Swift fox (*Vulpes velox*)	EN	EN Sep-99	EN Oct-99	EN	*IP*		
Piping plover (*Charadrius melodus*)	TH	EN Dec-99	EN Jan-00	EN	Jul-01	Feb-02	Apr-02
Ord's kangaroo rat (*Dipodomys ordii*)	NG	EN Mar-00	EN Apr-00	EN	[Apr-03]	[*IP*]	
Whooping crane (*Grus americanus*)	EN	EN Sep-01	EN Oct-01	EN	NA		
Bison (*Bison bison*)[1]	EN	-	-	EN			
THREATENED (2000)							
Peregrine falcon (*Falco peregrinus*)	EN	TH Jun-99	TH Jul-99	TH	May-01	*IP*	
Burrowing owl (*Athene cunicularia*)	TH	TH Sep-99	TH Oct-99	TH	Jun-01	*IP*	
Woodland caribou (*Rangifer tarandus caribou*)	TH	TH Dec-00	TH Jan-01	TH	[Oct-02]	[*IP*]	
Barren ground caribou (*Rangifer tarandus groenlandicus*)	TH	-	-	TH	NA		
Trumpeter swan (*Cygnus buccinator*)	TH	TH Apr-01	TH Jun-01	TH	[Apr-03]	[*IP*]	
Ferruginous hawk (*Buteo regalis*)	TH	Sep-01	Oct-01	TH◆◆			
Northern leopard frog (*Rana pipiens*)	TH	-	-	TH			
OTHER FORMS OF PROTECTION PROPOSED (2000-2002)							
Sprague's pipit (*Anthus spragueii*)	NG	SC Jun-99	SC Jul-99	NG(SC)◆	NA	*IP*	
Long-toed salamander (*Ambystoma macrodactylum*)	NG	SC Dec-99	SC Jan-00	NG(SC)◆	NA	*IP*	
Long-billed curlew (*Numenius americanus*)	NG	SC Mar-00	SC Apr-00	NG(SC)◆	NA		
Loggerhead shrike (*Lanius ludovicianus*)	NG	SC Mar-00	SC Apr-00	NG(SC)◆	NA		
Black-throated green warbler (*Dendroica virens*)	NG	SC Jun-00	SC Oct-00	NG(SC)◆	NA	*IP*	
Harlequin duck (*Histrionicus histrionicus*)	GA	SC Sep-01	SC Oct-01	GA(SC)◆	NA		
Bull trout (*Salvelinus confluentus*)	GF	SC Jan-02	SC Feb-02	GF(SC)◆	NA		
Prairie rattlesnake (*Crotalus viridis*)	NG	DD Dec-99	DD Jan-00	NG(DD)◆	NA	*IP*	
Wolverine (*Gulo gulo*)	FB	DD Dec-00	DD Jan-01	FB(DD)◆	NA		
Pygmy whitefish (*Prosopium coulteri*)	-	DD Sep-00	DD Oct-00	DD	NA		
Great plains toad (*Bufo cognatus*)	NG	DD Dec-00	DD Jan-01	NG(DD)◆	NA		
Canadian toad (*Bufo hemiophrys*)	NG	DD Dec-00	DD Jan-01	NG(DD)◆	NA		
Red-tailed chipmunk (*Tamias ruficaudus*)	NG	NR Jun-00	NR Oct-00	NG	NA	NA	
IN PROCESS (JUNE 2002) (E.G., AWAITING REGULATION DEVELOPMENT)							
Western spiderwort (*Tradescantia occidentalis*)	-	EN Apr-01	EN Jun-01	*IP*	[Oct-03]		
Soapweed (*Yucca glauca*)	-	EN Apr-02	EN May-02	*IP*	[Oct-03]		
Yucca moth (*Tegeticula yuccasella*)	-	EN Apr-02	EN May-02	*IP*	[Oct-03]		
Western blue flag (*Iris missouriensis*)	-	TH Sep-99	TH Oct-99	*IP*	Nov-01	Feb-02	Apr-02
Grizzly bear (*Ursus arctos*)	GA	TH Jan-02	TH Feb-02	*IP*	[Oct-02]	[*IP*]	
Cape May warbler (*Dendroica tigrina*)	NG	SC Jun-00	SC Oct-00	*IP*			
Bay-breasted warbler (*Dendroica castanea*)	NG	SC Jun-00	SC Oct-00	*IP*			

EN – Endangered; **TH** – Threatened; **GA** – Game Animal; **NG** – Non-game Animal; **GF** – Game Fish (under Federal Fisheries Act); **FB** – Fur-bearing Animal; **IP** – In Process; **◆** – Legal designation is Non-game Animal, Fur-bearing Animal, Game Bird or Game Fish, species further described as **SC** – Species of Special Concern or **DD** – Data Deficient; **◆◆** – Re-evaluation on hold pending analysis of additional data on population trends; NA – not applicable.

[1] Only bison (*Bison bison*) that are found, killed or captured on the land within the boundaries described in the regulation are endangered animals. The regulation has a detailed description of northwestern Alberta around the Hay-Zama lakes, north and west to the N.W.T. and B.C. borders.

[2] Pending development of the provincial recovery plan, Alberta has adopted the national recovery plan for sage grouse.

[3] [square brackets] indicate events current as of the printing of this report.

Recovery Planning

BURROWING OWL
THREATENED STATUS IN ALBERTA

One of the most important components of Alberta's Species at Risk Program is the development and implementation of recovery plans for species that are designated as "threatened" or "endangered." The overall goal of the recovery program is to maintain or restore these species to viable, naturally self-sustaining populations within Alberta. Development of these plans reflects Alberta's commitment to the *Accord for the Protection of Species at Risk*, the *National Framework for the Conservation of Species at Risk*, and requirements established under Alberta's *Wildlife Act*.

Alberta recovery plans are developed under the supervision of the Fish and Wildlife Division, Alberta Sustainable Resource Development. These recovery plans are prepared by recovery teams composed of a variety of stakeholders, often including representatives of government agencies, conservation organizations, industry, landowners, resource users, universities and others. Membership is by invitation from the Director of Wildlife Management in the Department of Sustainable Resource Development and includes appropriate representation from the diversity of interests unique to each species and circumstance.

Recovery plans comprise two main components: a recovery strategy and an action plan. These components are generally developed concurrently. The strategy includes a comprehensive compilation of both short- and long-term goals and objectives required for recovery of the particular "threatened" or "endangered" species and the general approaches and strategies that should be used to achieve recovery. The action plan identifies specific actions and timelines necessary to achieve the recovery goals. Conservation and management of these species continue during preparation of the recovery plan.

Once a draft recovery plan is completed, it is forwarded to the Endangered Species Conservation Committee (ESCC) for review. The ESCC then forwards recommendations and advice on implementation and recovery actions to the Minister of Sustainable Resource Development. After ministerial approval, a public information session is held. Plans accepted and approved for implementation by the Minister are published as part of the recovery plan report series. Approval of a recovery plan is a departmental endorsement of the path of action necessary to restore and maintain the species in question.

Recovery plans are "living" documents and are revised by the recovery team as conditions change or circumstances warrant. Each approved plan describes how an annual review and performance evaluation will be conducted. Implementation of each recovery plan is subject to the availability of resources, from within and outside government. The overall priorities of the species at risk program will be reflected in implementation activities.

As of June 2002, recovery planning and team formation has been initiated for five species: piping plover, western blue flag, burrowing owl, peregrine falcon and woodland caribou. The framework for an Alberta-focused approach for sage-grouse recovery planning has also been developed. Preliminary work has been undertaken for the formation of recovery teams for three other species: grizzly bear, trumpeter swan and Ord's kangaroo rat.

SWEETGRASS CONSULTANTS

PIPING PLOVER
ENDANGERED STATUS IN ALBERTA

ALBERTA PIPING PLOVER RECOVERY PLANNING

Recovery Team Lead: **Dave Prescott**

The piping plover is listed as "endangered" in Canada by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In May 2000, its status in Alberta was uplisted from "threatened" to "endangered" because of low population size (<250), threats to the species' habitat, and the inability of existing management to increase population levels. The ESCC considered the loss of habitat and nests to be unacceptable, and recommended that management actions should ensure the protection of breeding sites through habitat conservation initiatives.

The Minister of Sustainable Resource Development established the Alberta Piping Plover Recovery Team in July 2001. In February 2002, the *Alberta Piping Plover Recovery Plan 2002-2004* was completed by the team, and was submitted in March 2002 for review and approval by the Minister. The plan is an action-oriented document, with emphasis on cooperative, mutually beneficial solutions for landowners and other stakeholders, management tools resulting in the most immediate benefit to piping plovers, and the concept of adaptive management.

Every action item outlined for the first year of plan implementation is in progress. Managed grazing systems have been implemented on lands adjacent to several lakes (most notably Beaverhill and Handhills) in cooperation with landowners. These projects have kept cattle away from key plover nesting areas until after the breeding season, but still allow landowners or lessees access to the pastures during periods when plovers will not be affected.

Following the completion of each year's activities, plan accomplishments will be assessed and future recovery direction and initiatives will be re-evaluated as deemed necessary by the recovery team.

The *Alberta Piping Plover Recovery Plan 2002-2004* received ministerial approval in April 2002 and is available on the Alberta Species at Risk Program website: http://www3.gov.ab.ca/srd/fw/riskspecies.

WESTERN BLUE FLAG RECOVERY PLANNING

Recovery Team Lead: **Richard Quinlan**

In September 2001, the Minister of Alberta Sustainable Resource Development approved western blue flag for listing as a "threatened" species under Alberta's *Wildlife Act*. Earlier, in May 2000, COSEWIC reviewed the status of western blue flag in Canada and upheld its 1990 classification of "threatened." Both of these actions stimulated the initiation of the recovery process for western blue flag.

The Canada Western Blue Flag Maintenance/Recovery Team first met in November 2001 to prepare a recovery plan for this species. The team members were selected to represent a broad range of interests in both conservation of the species and the potential implications of management on landowners.

Alberta is the sole jurisdiction responsible for the management of western blue flag, and the recovery plan was developed to satisfy both provincial and national recovery plan requirements. A draft plan was presented to the Endangered Species Conservation Committee (ESCC) in February 2002 for review. The draft plan and comments from the ESCC

WESTERN BLUE FLAG
THREATENED STATUS
RECOMMENDED BY THE ESCC

were forwarded to the Minister for approval and implementation in March 2002.

The *Maintenance and Recovery Plan for Western Blue Flag* (Iris missouriensis) *in Canada* consists of two sections:

- a maintenance/recovery strategy that outlines principles, goals and objectives, and describes current status, limiting factors and general recommendations for management; and
- an action plan that identifies specific tasks and provides a schedule of when the activities will be done and by whom.

The primary goal of the plan is to ensure long-term maintenance of the naturally occurring population of western blue flag in Canada. The plan is also designed to reflect the principles of cooperation and voluntary participation, stakeholder involvement in management decisions, protection of a "threatened" species in a sustainable ranching landscape, and landscape management to benefit not just western blue flag but many other species that occur in native grasslands. The plan also includes recommendations for Alberta's *Wildlife Regulation* pertaining to western blue flag.

As part of the public consultation process, an open house was held in late May 2002. A meeting will be held annually, beginning in May 2003, to review recovery actions achieved and any changes to the plan that are needed. The plan has a designated life of five years, after which it will be reviewed and revised by the maintenance/recovery team.

Implementation of the actions outlined in the plan is expected in 2002-2003, and will include inventory of new sites, range inventories, contact with additional private land cooperators and completion of range management plans.

The *Maintenance and Recovery Plan for Western Blue Flag* (Iris missouriensis) *in Canada* received ministerial approval in April 2002 and is available on the Alberta Species at Risk Program website: http://www3.gov.ab.ca/srd/fw/riskspecies.

ALBERTA BURROWING OWL RECOVERY PLANNING

Recovery Team Lead: **Arlen Todd**

The burrowing owl was first listed as "threatened" under Alberta's *Wildlife Act* in 1987. This listing was upheld in 2000 following a review of the species' status. Nationally, the burrowing owl is listed as "endangered" by COSEWIC. The Alberta Burrowing Owl Recovery Team was formally established in June 2001 and the first meeting was held in July 2001.

The team recognizes that landholders and resource users have vital roles to play in successful recovery efforts for burrowing owls, and is committed to establishing a recovery planning process that is inclusive and effective. It is expected that the recovery plan will be finalized and submitted to the Director of the Wildlife Management Branch and the Endangered Species Conservation Committee during 2004.

ALBERTA PEREGRINE FALCON RECOVERY PLANNING

Recovery Team Lead: **Gordon Court**

Nationally, the *anatum* peregrine falcon (the only subspecies that breeds in Alberta) is listed as "threatened" by COSEWIC. In 1999, its status in Alberta was downgraded from "endangered" to "threatened" in recognition of the increasing population size in the province and declining organochlorine pesticide residues in peregrines and their prey. Along with this new listing, recovery planning and conservation actions in the province were formally initiated, complementing reintroduction efforts that date back to 1975. These actions included the formation of a multi-stakeholder recovery team and creation of a recovery plan.

The Minister of Sustainable Resource Development initiated the establishment of the Alberta Peregrine Falcon Recovery Team in May 2001. A final recovery plan is expected to be completed in 2004. It will be an action-oriented document; however, it will recognize the realities of soliciting or committing Species at Risk funds toward a species regarded as "in recovery," particularly one that has been the focus of management activities for more than three decades. The plan will outline a strategy to document recovery and a monitoring plan that should identify whether conservation actions are still required to assist this species in Alberta.

Following the completion of each year's activities, accomplishments will be assessed and future recovery direction and initiatives will be re-evaluated as deemed necessary by the recovery team. Pesticide residue analysis of peregrine falcon eggs has been completed up to and including the 2002 breeding season. Although average levels of pesticide residue are low and continue to fall, one sample from 2002 yielded the highest level recorded to date.

GORDON COURT

GREATER SAGE-GROUSE
ENDANGERED STATUS IN ALBERTA

GREATER SAGE-GROUSE RECOVERY PLANNING

Recovery Team Lead: **Dale Eslinger**

The greater sage-grouse has experienced substantial declines in population size and distribution throughout much of its range across the prairies, including Alberta and Saskatchewan. In 2000, COSEWIC reassessed the status of the prairie population of sage-grouse and upheld its 1998 designation of "endangered." During the same period, the ESCC assessed the provincial status of the species and recommended its designation as "endangered" under the *Wildlife Act* because of very small and declining population size and distribution.

The Canadian Sage Grouse Recovery Team was formed in November 1997 to initiate recovery planning for the prairie population of sage-grouse. The interprovincial team followed Recovery of Nationally Endangered Wildlife (RENEW) guidelines in developing the recovery plan. Alberta endorsed the resulting *Canadian Sage Grouse Recovery Strategy* in September 2001.

The recovery strategy lists the primary recovery goal and related objectives, provides an overview of sage-grouse ecology and status, and outlines key recovery strategies. Alberta is now poised to develop a recovery action plan. Alberta's Sage Grouse Recovery Action Group will be formed in late 2002 and will engage local stakeholders in the process.

The *Canadian Sage Grouse Recovery Strategy* is available on the Alberta Species at Risk Program website: http://www3.gov.ab.ca/srd/fw/riskspecies.

ALBERTA WOODLAND CARIBOU RECOVERY PLANNING

Recovery Team Lead: **Dave Hervieux**

The woodland caribou populations in Alberta are considered "threatened" at both the national and provincial level. The COSEWIC lists both the boreal and southern mountain populations as "threatened" (status re-examined and confirmed in May 2002), and the legal status in Alberta has been "threatened" since 1984. This provincial status was upheld by the Minister of Sustainable Resource Development in September 2001, because of small and declining populations.

Alberta's Woodland Caribou Recovery Team will be formed during summer of 2002 to create and oversee the implementation of a recovery plan for Alberta's woodland caribou. Membership invitations were circulated in May 2002 and a wide variety of stakeholders have been invited to participate on the recovery team. The estimated date of completion for the recovery plan is spring/summer of 2004.

JOEL NICHOLSON

SHORT-HORNED LIZARD
UPCOMING PRIORITY FOR ASSESSMENT BY ESCC

Alberta's Strategy to Protect Species at Risk

The Endangered Species Conservation Committee (ESCC) is part of an overall process of wild species conservation in Alberta that incorporates both provincial and national goals and strategies.

In Alberta, those species potentially at risk of extinction or extirpation are first identified through a process managed by Fish and Wildlife Division, Alberta Sustainable Resource Development, which ranks the general status of each Alberta species. The purpose of this "coarse filter" process is to assign initial priorities for species assessment, data collection and species management. The Fish and Wildlife Division publishes reports on the general status of Alberta wildlife every five years. The next edition is to be completed in 2005 (see the box below for how to get your copy of the 2000 report).

If a species has been identified as being at risk, the Fish and Wildlife Division and Alberta Conservation Association jointly prepare a detailed Alberta status report. Using this report, and any relevant additional information, the Scientific Subcommittee of the ESCC then assesses what the risk of extinction or extirpation is for that species in Alberta. In this process, the national Committee on the Status of Endangered Wildlife in Canada (COSEWIC) rating (see page 16) for the species is considered, but Alberta's assessment may differ because it is related only to the status of the species within the province.

The information gathered by the Fish and Wildlife Division, is used by the Scientific Subcommittee to prepare an evaluation, which is presented to the ESCC. The committee then decides what recommendations to make to the Minister of Sustainable Resource Development concerning the legal designation, management and recovery of the species.

If a species is legally designated under the *Wildlife Act*, the Minister of Sustainable Resource Development will prepare a recovery plan for the species. The role of the ESCC in this process is as follows:

- to identify appropriate stakeholders to assist scientists in preparing the recovery plan;
- to review and provide advice on a draft plan; and
- to facilitate appropriate public review of, and input into, a recovery plan.

A document called an *Initial Conservation Action Statement* briefly summarizes the recommendations of the ESCC concerning actions that should be taken by Alberta to conserve a species, including immediate actions needed while a recovery plan is being put in place. An *Initial Conservation Action Statement* is implemented immediately upon approval by the Minister of Sustainable Resource Development.

Initial Conservation Action Statements: What They Contain

1. Species description.
2. Alberta status (and rationale for status rating) as assessed by the Scientific Subcommittee of the ESCC.
3. Initial conservation responses recommended by the ESCC, including
   - legal designation recommended by the ESCC and a brief statement of the rationale
   - action and resources needed for conservation efforts.

Where Alberta Species at Risk, Detailed and General Status Reports Are Available

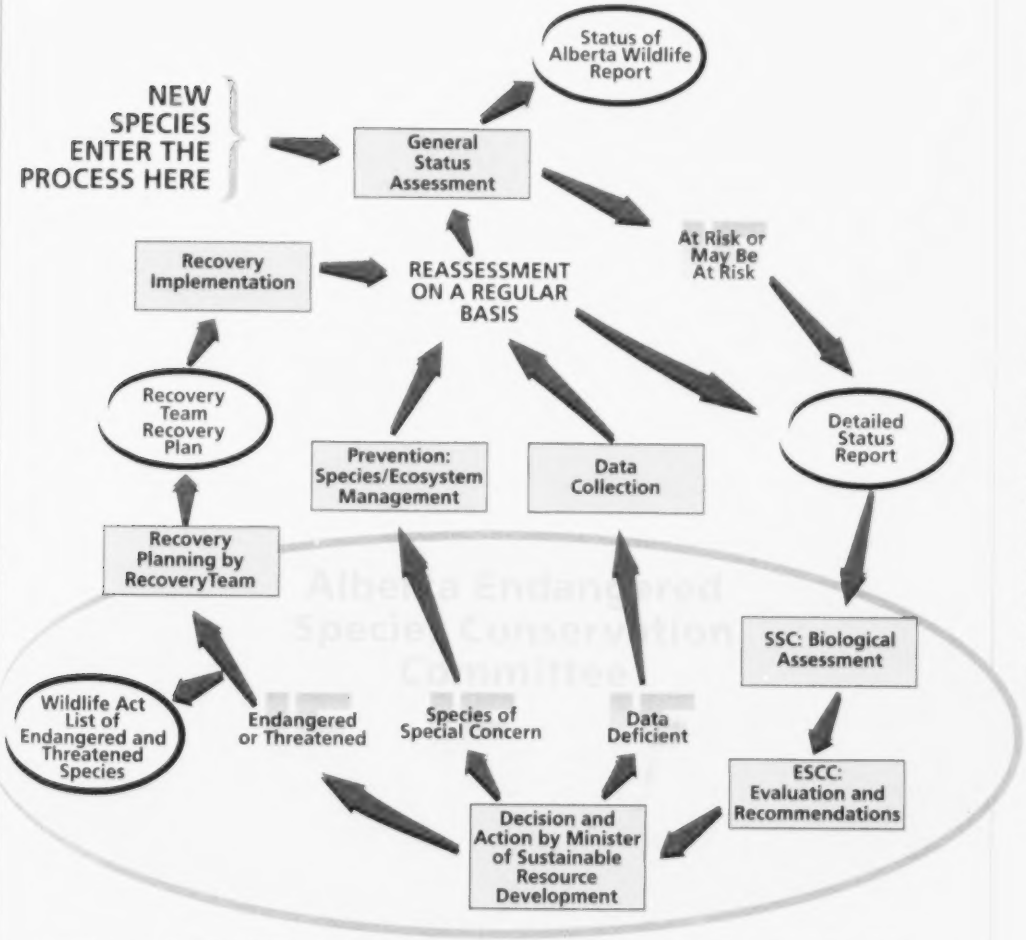
Edmonton
Information Centre - Publications
Alberta Sustainable Resource Development
Main Floor, Great West Life Building
9920 - 108 St.
Edmonton, Alberta, Canada T5K 2M4

Phone: (780) 944-0313;
within Alberta use the Rite Line 310-0000
Fax: (780) 427-4407
E-mail: env.infocent@gov.ab.ca

OR

< http://www3.gov.ab.ca/srd/fw/riskspecies >

In keeping with commitments made under the Accord, Alberta must also prevent species from becoming at risk. This preventative action is less costly than recovering endangered or threatened species. The ESCC also recommends management strategies to the Minister of Sustainable Resource Development that will prevent a species from becoming at risk. Thus far, assessed species that are not at immediate risk of extinction or extirpation, but still require special management and/or additional data collection have been identified as "species of special concern" or "data deficient."


NEW SPECIES ENTER THE PROCESS HERE
Status of Alberta Wildlife Report
General Status Assessment
At Risk or May Be At Risk
Recovery Implementation
REASSESSMENT ON A REGULAR BASIS
Recovery Team Recovery Plan
Prevention: Species/Ecosystem Management
Data Collection
Detailed Status Report
Recovery Planning by RecoveryTeam
SSC: Biological Assessment
Wildlife Act List of Endangered and Threatened Species
Endangered or Threatened
Species of Special Concern
Data Deficient
ESCC: Evaluation and Recommendations
Decision and Action by Minister of Sustainable Resource Development
Process
Outcome or Publication
Decision Point
ESCC = Alberta's Endangered Species Conservation Committee
SSC = Scientific Subcommittee

Species that go through the detailed status process and are found to be "Not At Risk" are identified for general management and regular general status assessment.

Protection for Endangered and Threatened Species[1] Under Alberta's *Wildlife Act*

1. Protects nests and dens of both threatened and endangered species throughout the year.
2. Provides penalties for killing or trafficking in endangered species (up to $100 000 fine and/or six months in jail).
3. Designated non-game species also receive some specific protections.

[1] currently, automatic protections apply only to non-fish vertebrates. To list plants, invertebrates and fish, similar protection must be specified by development of new regulations.

Recovery Plan Commitment

By signing the federal/provincial/territorial *Accord for the Protection of Species at Risk* in 1996 [see page 16], Alberta committed to the prompt development of recovery plans—within one year [from the time the species is officially designated] for endangered species; within two years for threatened species.

PEREGRINE FALCON
THREATENED STATUS IN ALBERTA

What Happens at the National Level

There are two key cooperative processes that have driven endangered species conservation efforts nationally over the last few decades. One is the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which was created by federal and provincial wildlife Ministers in 1977. This committee, which includes government, academic and nonacademic experts, identifies wild species at risk in Canada.

In order to facilitate recovery of those species identified by COSEWIC as at risk of extinction, the committee on the Recovery of Nationally Endangered Wildlife (RENEW) was created by the Wildlife Ministers' Council of Canada in 1988. This committee oversees the development and implementation of recovery plans for species identified as "threatened" or "endangered" nationally. Alberta participates on most national recovery teams for COSEWIC-designated species at risk that occur in the province.

The federal/provincial/territorial *Accord for the Protection of Species at Risk*, which Alberta signed in 1996, committed federal, provincial and territorial governments to increased cooperation and action on the conservation of species at risk. The formation of the Endangered Species Conservation Committee was one of the means by which Alberta began to meet its commitments under the Accord.

There have been a number of recent advances at the national level in the area of Species at Risk. After several years under development, the *Species at Risk Act* (SARA), Bill C-5, was expected to be passed through the House of Commons in the autumn of 2002. (Note: as of printing this report, Bill C-5 received Royal Assent on December 12, 2002; regulations are in preparation, and proclamation of a substantial portion of the Act occurred on June 5, 2003.)

Key components of this new federal legislation include the following:

- national assessment by COSEWIC and federal listing under SARA (see below);
- basic protections against killing, possession, trafficking, destruction of residences;
- critical habitat designation and protection;
- recovery planning and consultation (see below); and
- permitting of activities that affect a listed wildlife species, or its critical habitat or residence.

With proclamation of SARA, COSEWIC will be created, in law, as an independent body of experts responsible for assessing and identifying species at risk. Assessments made by COSEWIC will be reported to the Federal Minister of the Environment and to the Canadian Endangered Species Conservation Council, a committee composed of ministers responsible for wildlife.

Once SARA is proclaimed, the Federal Minister must prepare a recovery strategy and one or more action plans for each nationally endangered, threatened or extirpated species. Management plans must be developed for Species of Special Concern. The RENEW will continue to guide the recovery process. Recovery strategies and action plans will be developed following the guidelines established in RENEW's *Recovery Operations Manual*.

The new federal *Species at Risk Act* will undoubtedly have some impact in Alberta. It will likely lead to increased federal presence and spending in the area of species at risk. The ESCC is very interested in seeing how provincial/federal integration and cooperation will occur. To this end, the committee continues to invite federal government representatives to ESCC meetings to speak on this topic and answer any questions that committee members might have about SARA and its impacts in Alberta.

The new legislation will create some challenges that will have to be met with creative solutions. No matter what challenges arise, Alberta remains committed to the *Accord for the Protection of Species at Risk*, and continues to support the cooperative approach of the Accord. This cooperative approach is the foundation for how the ESCC works, and has proved its worth for species at risk.

Some Helpful Websites

Provincial

Alberta's Species at Risk Program (including reports)
www3.gov.ab.ca/srd/fw/riskspecies/index.html

Alberta Natural Heritage Information Centre
www.cd.gov.ab.ca/preserving/parks/anhic

National

Federal Species at Risk Act (SARA) Public Registry
www.sararegistry.gc.ca

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
www.cosewic.gc.ca

Accord for the Protection of Species at Risk
www.ec.gc.ca/press/wild_b_e.htm

Species at Risk in Canada
www.speciesatrisk.gc.ca

International

World Conservation Union (IUCN)[1]
iucn.org/themes/ssc/index.htm

[1]The World Conservation Union has kept its former acronym— IUCN.

STEVE HANDS

LONG-TOED SALAMANDER
SPECIES OF SPECIAL CONCERN
STATUS RECOMMENDED BY ESCC

Updates on Species Assessed 1999 - 2000

The *First Report of the Alberta Endangered Species Conservation Committee 2000* presented information on the initial nine species evaluated by the Endangered Species Conservation Committee (ESCC). Since 2000, most of these species have entered the recovery process, and are reported on in the recovery section of this report (see page 9). The following accounts describe progress made since 2000 on those species that are not included in the recovery section: swift fox, Sprague's pipit, long-toed salamander, and prairie rattlesnake. Brief information summaries for two additional species, ferruginous hawk and red-tailed chipmunk, are also presented.

SWIFT FOX [ENDANGERED]

Recovery Team Lead: **Joel Nicholson**

A swift fox (*Vulpes velox*) population has been successfully reintroduced in Alberta, but remains "endangered" because of its extremely small size.

A National Swift Fox Recovery Team is currently co-chaired by the National Parks Service and the Calgary Zoo. An updated national recovery strategy is currently being produced. Under the coordination of the Calgary Zoo, several government and nongovernment agencies participated in the international swift fox census across the prairies of Alberta, Saskatchewan and Montana from October 2000 - February 2001. The census results show that the swift fox population has increased in abundance as well as in its known distribution. An estimated 560 foxes in 2001, nearly three times the population size just five years earlier, have been documented in the core range in the Alberta/Saskatchewan border area.

The formation of a provincial swift fox recovery team is currently underway. Future plans include additional research into threats to the swift fox population (such as disease, accidental mortality, and genetic viability) and monitoring activities to reassess the population size and trends. Support for landowner conservation initiatives will continue.

SPRAGUE'S PIPIT [SPECIES OF SPECIAL CONCERN]

Management Lead: **Dave Prescott**

Sprague's pipit (*Anthus spragueii*) was identified as a "species of special concern" for Alberta in July 1999. A provincial management plan for Sprague's pipit is now being drafted, with the goal of maintaining its current distribution and population. The management plan will focus on maintaining long-term monitoring in order to understand population distribution and trends; maintaining or improving the quality or quantity of breeding habitat (native grassland) in the province; and raising the profile of the Sprague's pipit through public education and communication with industry and landowners.

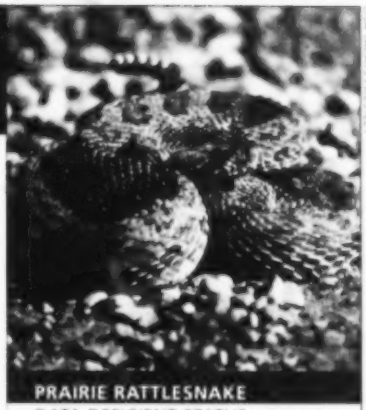
Sprague's pipits have not been the subject of specific monitoring efforts in the past. However, distribution and population trends are monitored by the Breeding Bird Survey in Alberta, and elsewhere within its range. The species has also been well represented in various generalized surveys conducted over a wide range of southern and central Alberta, and in extensive roadside point counts conducted in 2002 by the Canadian Wildlife Service. Many of these studies have documented habitat use, confirming the species' strong preference for native grasslands that are lightly grazed. The only important parameter that has not been estimated for this species is population size.

LONG-TOED SALAMANDER [SPECIES OF SPECIAL CONCERN]

Management Lead: **Lisa Wilkinson**

In January 2000, the long-toed salamander (*Ambystoma macrodactylum*) was identified as a "species of special concern" in Alberta. Drafting of a Long-toed Salamander Conservation Management Plan has since begun with the goal of maintaining the current distribution and population of long-toed salamanders in Alberta. Objectives include the maintenance of long-term monitoring to understand population distribution and trends; the identification of habitat requirements and instigation of appropriate habitat management for both breeding and nonbreeding habitat; and continuation of public education and communication with industry and landowners. A provincial long-toed salamander monitoring protocol has also been developed to ensure consistency in surveys between study sites and years.

Monitoring programs are ongoing for the breeding areas that were being monitored as of 2000. In addition, reconnaissance surveys occurred in the Peace River Valley (near Fairview) and in the Oldman River Basin in 2001, but no monitoring programs have yet been established for these areas.



PRAIRIE RATTLESNAKE
DATA DEFICIENT STATUS
RECOMMENDED BY ESCC

PRAIRIE RATTLESNAKE [DATA DEFICIENT]

Management Lead: **Joel Nicholson**

In Alberta, the prairie rattlesnake (*Crotalus viridis viridis*) is identified as "data deficient" because of a lack of data on population size and trends. The population may be in decline, but the extent of decline is not known. A Prairie Rattlesnake Conservation Management Plan is being drafted with the goal of acquiring information on population size and trends of prairie rattlesnakes in Alberta. More specific management objectives will focus on continued long-term monitoring of hibernacula, and obtaining data on habitat requirements and on land use effects on rattlesnake populations. Other key objectives include (1) intensive investigation of road mortality levels and development of specific management strategies to mitigate this mortality, (2) communication with landowners/leaseholders and industry about the conservation requirements of this species, (3) more accurate estimation of population size of rattlesnakes using mark-recapture studies in key study areas, and (4) education and extension to increase public support for rattlesnakes. Monitoring (coordinated by a provincial fish and wildlife biologist) continues to collect data on population size, trends and distribution of prairie rattlesnake populations in Alberta. Standardized protocols for locating snake hibernacula are being developed, and annual counts of rattlesnakes are made at hibernation sites during spring and fall when rattlesnakes are aggregated at hibernacula. Recent research and management have focused on three subpopulations of rattlesnakes: Suffield National Wildlife Area, Medicine Hat Area, and the City of Lethbridge.

GORDON COURT

FERRUGINOUS HAWK
THREATENED STATUS IN ALBERTA

FERRUGINOUS HAWK [THREATENED]

Management Lead: **Richard Quinlan**

In September 2001, the Scientific Subcommittee of the ESCC examined the existing data on Alberta's ferruginous hawk (*Buteo regalis*); the data indicated that a population decline is likely continuing, but more information is needed on the appropriate status of this species. In the interim, the subcommittee recommended maintaining the ferruginous hawk's "threatened" status under the *Wildlife Act*, pending additional data collection.

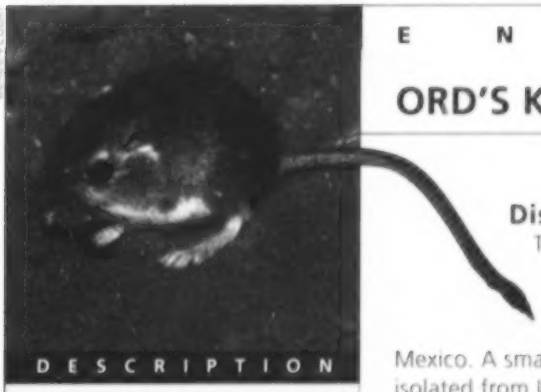
RED-TAILED CHIPMUNK [NOT AT RISK]

In June of 2000, the Alberta status of the red-tailed chipmunk (*Tamias ruficaudus*) was assessed by the Scientific Subcommittee of the ESCC. The subcommittee determined that the red-tailed chipmunk does not clearly qualify under any of the risk categories, despite its limited range and relatively small population size in Alberta. In June 2001, Alberta's red-tailed chipmunk was designated as "not at risk." As a result of its status designation, recovery planning has not been conducted for this species.

NINETEEN SPECIES

EVALUATED BY THE ENDANGERED SPECIES CONSERVATION COMMITEE

JUNE 2000 - JUNE 2002



DESCRIPTION

E N D A N G E R E D

ORD'S KANGAROO RAT (*Dipodomys ordii*)

The Ord's kangaroo rat is a medium-sized rodent with orange-brown fur on its back and white fur on its abdomen, feet and above its large dark eyes. It measures 20 to 28 cm from the tip of its nose to the end of its tail, which can be up to 16 cm in length. The rodent's particularly large hind legs, large feet, and long tail, as well as its hopping style of locomotion have inspired its name. It can jump up to 2 m in a single leap.

This species is not closely related to either kangaroos or rats. It belongs to the family Heteromyidae, a group of rodents that is specialized for living in very hot and dry environments. A kangaroo rat is so well adapted for water conservation that it can survive without drinking water. It is a secretive animal that avoids predators, which include owls, snakes, badgers, bobcats, coyotes, foxes and weasels. For defence, it relies on its good sense of hearing, by escaping into underground burrows, and by being active at night instead of during the day.

Distribution

The Ord's kangaroo rat is found in the western and central United States and as far south as central Mexico. A small northern population, isolated from U.S. populations by more than 300 km, lives in the Middle Sand Hills north of Medicine Hat in southeastern Alberta, and in the adjacent Great Sand Hills of southwestern Saskatchewan.

Habitat

The Ord's kangaroo rat depends on open, sparsely vegetated sand dunes, which are becoming increasingly rare in Alberta. Historically, natural prairie wildfires and large mammals such as plains bison discouraged vegetation from growing in these sandy areas. The kangaroo rat needs loose, open, sandy soils so that it can dig an underground burrow and hop quickly across open ground to escape from predators.

Population

It is difficult to estimate the number of Ord's kangaroo rats that live in Alberta because of highly variable reproductive and survival rates. However, there are probably fewer than 1000 individuals during the early spring. Winter is a critical time, when up to 90% of the population dies as a result of a lack of food and inadequate amounts of stored fat. This mortality occurs despite the fact that they save some energy by hibernating during the winter.

Threats

When natural habitat is in short supply, the Ord's kangaroo rat uses sandy habitats such as roadsides, trails or cultivated fields. These alternative habitats increase predation upon the rodents by providing predators easier access.

Additionally, the kangaroo rat is often infested with a large parasite called a botfly, which reduces its reproduction and survival.

Since it stays underground during bright nights, artificial lights presumably reduce foraging opportunities and may ultimately leave it without enough stored food and fat to survive long winters.

Management

There are currently no provincial or national recovery plans in place for the Ord's kangaroo rat. A provincial recovery team, including Alberta Sustainable Resource Development and other relevant agencies and groups, is being formed, and will meet in the spring of 2003. The team will prepare a recovery plan to set goals, objectives, strategies and management actions needed to guide the recovery of this species over the next five years.

The Endangered Species Conservation Committee recommended that efforts focus on conservation of existing populations through prevention of further habitat decline. Protection of the Ord's kangaroo rat population will require specific attention to avoiding loss of important den areas. Long-term monitoring of populations and distribution is necessary, as well as the assessment of potential impacts of industrial disturbances such as oil and gas developments.

Research is needed to determine if it is possible to mimic historical natural disturbances, to encourage erosion, and to maintain suitable habitat in otherwise densely vegetated sand dunes. Additional research should evaluate whether human-disturbed habitats such as roadsides can support sustainable populations.

STATUS

Alberta: Endangered; recommended in 2000

Saskatchewan: Sensitive

Canada (COSEWIC): Special Concern

U.S.: Nationally listed as Secure; considered common in many states

WHOOPING CRANE *(Grus americana)*

Population and Distribution

As a result of overhunting, habitat loss and habitat degradation over most of its range, the whooping crane population shrank from 1300 to1400 individuals in the late 1800s to only 15 migrating birds by 1941. Today, three separate wild whooping crane populations exist: the Eastern Migratory flock, which was reintroduced and summers in Wisconsin and winters in Florida; the Florida flock, which was also reintroduced, but is nonmigratory; and the Wood Buffalo-Aransas flock, a natural population that breeds in Wood Buffalo National Park, along the border between Alberta and the Northwest Territories, and winters at the Aransas National Wildlife Refuge in Texas.

Although still extremely vulnerable, the whooping crane population is slowly increasing. As of December 2002, there were 91 birds and six nests in the Florida population, 21 birds in the Eastern Migratory population, and 185 birds in the Wood Buffalo-Aransas population with 50 nests (eight in Alberta).

Habitat

In Canada, the whooping crane currently nests in the northeastern part of Wood Buffalo National Park in isolated, shallow, poorly drained wetlands. Most historical records of breeding birds in Alberta were from the aspen parkland. Generally, the whooping crane winters in saltwater marshes and tidal flats. While migrating, it roosts in wetlands and forages for waste grain in harvested crop fields.

Threats

The single greatest cause of mortality for the whooping crane is power line collisions during migration. In addition, migrating birds must pass through areas subject to the alteration and pollution of wetlands and grasslands resulting in a lack of suitable stopover habitats.

Both the breeding and wintering grounds of the migratory flocks are protected, although habitat in Texas is subject to some human disturbance. Other threats include predation, especially of newly hatched chicks, and disease. The whooping crane population also remains vulnerable to catastrophic events because of its very small size. Hurricanes and pollution on the coastal wintering range, and other natural factors such as drought and competition threaten survival. Poaching and accidental shooting resulting from misidentification are occasional threats.

Management

The current whooping crane population increase is credited to public education, captive breeding programs and habitat conservation and enhancement. Mitigation efforts to reduce power line collisions have also benefited the species.

The whooping crane is protected in North America under the *Migratory Birds Convention Act* of 1917. Both Canada and the United States have national recovery plans, and the two countries have completed a "memorandum of understanding" that outlines cooperative management, research and conservation efforts. In Alberta, the species is protected as an endangered species under the *Wildlife Act*. Alberta is providing input to the Draft International Whooping Crane Recovery Plan and co-operating with other Canadian jurisdictions to prepare a Canadian National Recovery Strategy.

DESCRIPTION

North America's tallest bird, the whooping crane stands almost 1.5 m tall and has a wingspan of up to 2.5 m. An adult "whooper" is snowy white with black wingtips, a long neck, a long dark pointed bill, and long thin black legs. The whooping crane also has bright yellow eyes and a patch of bare red skin that extends backward on its head from the bill. Juveniles are rusty or cinnamon brown.

In the breeding season, the whooping crane is usually found alone or as a pair of adults and single young. During migration, the whooping crane is often seen alone or in small groups of up to six or seven birds.

STATUS

Alberta: Endangered; status maintained in 2002

Saskatchewan, Manitoba, Northwest Territories: At Risk

British Columbia: Accidental

Ontario: May Be At Risk

Canada (COSEWIC): Endangered

U.S.: Nationally listed as Critically Imperiled; Endangered or Extirpated in many states

DESCRIPTION

T H R E A T E N E D

WOODLAND CARIBOU *(Rangifer tarandus)*

The woodland caribou is a medium-sized member of the deer family, with a brown body, and a cream-coloured neck, mane, tail and rump area. A long, dense winter coat that provides protection and short ears and tail are some of the many adaptations that the woodland caribou has developed for harsh winter conditions. Large, crescent-shaped hooves and long legs allow it to search for lichens (its main food source), and provide effective weight distribution for travelling over muskeg or snow-covered areas. Male woodland caribou have large, intricate, forward-curving antlers. Unique within the deer family, the female woodland caribou usually has small antlers.

Alberta's woodland caribou are classified into two ecotypes – mountain and boreal – which are distinguished primarily from behaviour and habitat. Most mountain caribou are migratory, and make seasonal migrations between alpine/subalpine areas in the mountains and the upper foothills. The boreal caribou is not migratory; it wanders extensively throughout the year in peatland areas, but there is considerable overlap between its summer and winter ranges.

Distribution and Population

Distribution and abundance of the woodland caribou have been dramatically reduced since 1900. There is uneven distribution across the northern and west-central parts of Alberta, and separate subpopulations are isolated. Determining an exact caribou population size is difficult; however, researchers monitor the number of adults that die and the number of calves that become breeding adults to get information on population trends. Current population estimates fall between 3600 and 6700 animals in Alberta.

Habitat

The woodland caribou occupies large tracts of undisturbed mature forest or peatland habitats characterized by an abundance of slow-growing lichens. It takes between 60 and 150 years for a forest community to reach this stage, and forest clearing removes wintering habitat and lichens.

Threats

The woodland caribou is threatened by habitat alteration and by complex interactions between habitat alteration and predation levels. When humans or nature (i.e., fire) disturb its habitat, it becomes less able to avoid predators. Younger forests attract moose, elk and deer, which in turn attract more wolves into an area. Predation, primarily by wolves, is recognized as the most common cause of caribou death. The woodland caribou avoids areas near linear developments (such as roads, seismic lines and pipelines), which reduces the amount of available habitat. Linear developments increase vehicle collisions and hunting, provide access routes for wolves, and partially restrict woodland caribou from travelling freely across the landscape.

In summary, the factors affecting woodland caribou populations include predation, poaching and hunting, vehicle collisions, habitat change (loss, fragmentation or alteration), land use activities, weather and climate, disease, and parasites. Compared to other deer species, the woodland caribou's rate of reproduction is low, making recovery from population declines difficult.

Management

Current management involves applying the knowledge gained from several years of research conducted on caribou ecology and habitat use. Management focus is on ways to mitigate the negative effects of past industrial development, and the development of long-term plans for industrial activities in caribou ranges.

Since Alberta's woodland caribou is listed provincially and nationally as "Threatened," recovery planning is required at both levels. A provincial recovery plan is being prepared to set goals, objectives, strategies and management actions to guide recovery over the next five years. This plan is being prepared by a multi-stakeholder recovery team, which will address the needs of both ecotypes, as well as communicate with the current caribou committees. Provincial recovery planning will be integrated with recovery planning at the national level.

The West Central Alberta Caribou Committee and the Boreal Caribou Committee educate the public and stakeholders, assess the effects of innovative industrial practices on caribou and develop extensive research programs and guidelines for industrial activity on the woodland caribou's range.

STATUS

Alberta: Threatened; status maintained in 2001

British Columbia, Manitoba, and Northwest Territories: Secure; some B.C. populations are of conservation concern

Saskatchewan: Sensitive; some populations of particular conservation concern

Canada (COSEWIC): Threatened (both ecotypes)

U.S.: Imperiled

T H R E A T E N E D

TRUMPETER SWAN *(Cygnus buccinator)*

Habitat

The trumpeter swan nests on shallow lakes and marshes, and excludes other swans from the water body. It requires an abundance of aquatic plants, snails and insects for food. When exposed to repeated disturbances, including loud traffic, boats, floatplanes, pedestrians, and human intrusion on a breeding lake, the trumpeter swan will not nest or it will abandon nests and young.

Distribution and Population

Historically, the trumpeter swan bred throughout Alberta but was near extinction by the early 1900s. Vast numbers of this swan had been shot for down, feathers and meat, and much of its habitat had been lost to human settlement. By the 1930s, a small population in Yellowstone National Park, Wyoming was the only known breeding population. Since 1944, the trumpeter swan has gradually increased in Alberta. In 2000, surveys reported 995 swans in Alberta, 608 of which were found in the Grande Prairie area. Other small flocks have been found scattered across the province.

Threats

The greatest limiting factor threatening the trumpeter swan is a critical shortage of wintering habitat. During winter, the majority of trumpeter swans from Alberta concentrate on open waters in the greater Yellowstone area in the "Tristate" region of Idaho, Montana and Wyoming. They share this very small area with trumpeter swans from the Yukon, Northwest Territories, and British Columbia, as well as locally breeding swans. This overcrowding means there is high competition for the limited food supply, and also increases the potential for major losses resulting from disease, parasites, severe weather conditions, and habitat alteration. Further sources of swan mortality may include predation, lead poisoning, accidental shooting and electrocution from collisions with power lines.

Management

In the 1930s, an international program was established to protect the trumpeter swan and its remaining habitat. Recently, an international swan management plan has been outlined and goals for breeding populations have been set. In North America, the trumpeter swan has responded well to restoration programs and conservation efforts.

Alberta's trumpeter population is increasing and appears to be returning to some of its historic range. Continued success depends upon the reduction of breeding disturbances, as well as the ability of the birds to expand their breeding and wintering ranges. An attempt to re-establish a breeding population at Elk Island National Park is ongoing. Concerned naturalists and residents in the Grande Prairie region have also supported efforts to protect trumpeter swan habitat and reduce human disturbance.

A provincial recovery plan will soon be prepared, setting goals, objectives, strategies and actions needed to guide management of these swans over the next five years. This planning exercise will be integrated with both national and international recovery and conservation initiatives.

DESCRIPTION

The trumpeter swan is a migratory waterfowl species seen across the aspen parkland and boreal forest of Alberta during spring, summer and fall. It is a large, white bird with an unusually long and graceful neck. It often has a rusty-orange stain on its head and neck as a result of feeding in lakes that are high in iron.

The trumpeter is easily confused with the similar-looking, though smaller, tundra swan. However, trumpeter swans often have a red line along the upper edge of their lower jaw, whereas tundra swans do not. (Unlike the trumpeter swan, most tundra swans have a yellow patch in front of their eye, and their eyes do not appear to blend into the black base of their bill, but appear separate.)

STATUS

Alberta: Threatened; status maintained in 2001

Saskatchewan: May Be At Risk

Manitoba: Extirpated

British Columbia, Northwest Territories: Sensitive

Canada (COSEWIC): Downlisted from Vulnerable to Not at Risk in 1996

U.S.: Apparently Secure; removed from Endangered species list

USA TAXIS PHOTO

DESCRIPTION

The black-throated green warbler is a small (11-12 cm long), migrant wood warbler that inhabits the boreal forest and foothills of Alberta. The male has a bright yellow face, a black throat and upper breast, an olive green crown, back and wings, a black tail, and a contrasting white abdomen. The female is duller in appearance, and her throat and breast are mottled with black and yellowish-white, rather than solid black. The black-throated green warbler's song is a distinctive buzzy "zeee-zee-zee-zoo-zeee."

BLACK-THROATED GREEN WARBLER *(Dendroica virens)*

Distribution and Habitat

The black-throated green warbler breeds across the boreal forest of Canada and the northeastern United States, and winters in Mexico and Central America. It is found in northern and western Alberta, where it approaches the northern limits of its range.

The black-throated green warbler occurs in older mixedwood forests (80-130 years) of trembling aspen, balsam poplar and white spruce. It avoids disturbed and edge habitats as well as small forest patches.

Population

In Alberta, the black-throated green warbler is sparsely distributed over most of its range, but it can be locally common in some areas of suitable habitat. No provincial population estimate exists; however, biologists suspect that the population is declining over parts of its range in Alberta, but have no suitable data to estimate the rate of decline throughout the province.

Threats

The primary threats to this species in Alberta are habitat loss and fragmentation, which are mainly caused by forestry and oil and gas development. One study in an area of northern Alberta showed that only five years after harvesting, habitat fragmentation contributed to an estimated 50% decline in black-throated green warbler numbers. Small forest patches may not meet all of the habitat requirements of this species, and individuals may be reluctant to move across areas of unsuitable habitat between forest patches. Small forest patches also have a relatively high amount of edge habitat, which this species may avoid. Generally, egg predation and brood parasitism both increase at habitat edges. Timber harvesting has increased significantly in Alberta in recent years, and regenerating forests will not reach a sufficient age to support black-throated green warblers before being harvested again. Loss of wintering habitat in Central America may also be affecting black-throated green warbler populations.

Management

Under Alberta's *Wildlife Act*, the black-throated green warbler is designated as a "non-game animal." Alberta's Endangered Species Conservation Committee has recommended the conservation of its habitat through long-term forest management focused on maintaining populations that are well distributed over the species' historic range. In response, Alberta Sustainable Resource Development (SRD) is enhancing programs that collect information on the distribution, population size and trend of this species in Alberta.

In 2001, the Alberta Bird Atlas Project and the University of Alberta Remote Areas Program, began a five-year joint initiative (supported in part by SRD) to address the need for population information throughout the northern portion of the black-throated green warbler range in Alberta. Other research initiatives are underway, or have been recently completed.

Conservation of Alberta's black-throated green warbler population should concentrate on slowing direct habitat loss. Maintenance of mixedwood forests through innovative harvesting and silvicultural practices, allocation of larger patches of older forest (> 40 ha) to wildlife reserves in harvested areas, and increasing the intervals between subsequent harvests could guarantee continued availability of black-throated green warbler habitat in Alberta.

STATUS

Alberta: Species of Special Concern; recommended in 2000

Manitoba: Secure

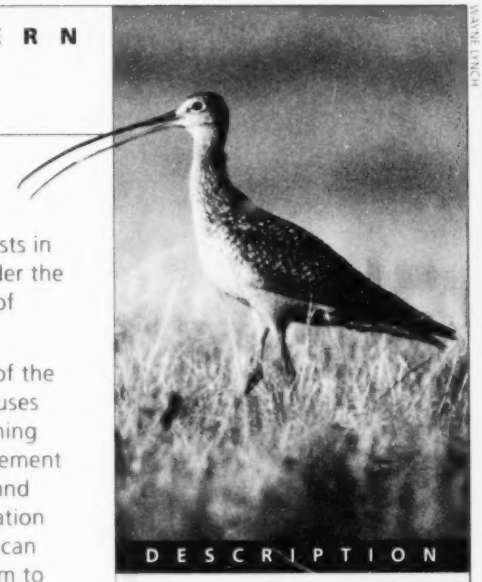
Saskatchewan: Sensitive

British Columbia: At Risk

Canada (COSEWIC): Not yet assessed; National General Status is Secure

U.S.: Nationally listed as Secure

LONG-BILLED CURLEW (*Numenius americanus*)



Habitat and Distribution

The long-billed curlew inhabits large areas of native grassland and sandhill habitats. It breeds from the interior of British Columbia through southern Manitoba and in many parts of the United States. The long-billed curlew migrates to coastal and inland wetland habitats in the winter. This species is found mostly in the grasslands of southeastern Alberta. It sometimes inhabits agricultural areas, but generally prefers native grasslands to cultivated fields and tame pastures.

Population

Both the breeding range and the population size of the long-billed curlew have been reduced since the late 1800s and early 1900s. Today, its Alberta range appears to be stable, although limited evidence suggests this species is declining in number. The long-billed curlew population in Alberta's grassland region was estimated to be between 19 122 and 28 646 birds in 2001. This may seem like a healthy population size; however, dramatic declines in its Saskatchewan population suggest that this species should be carefully monitored.

Threats

Long-term declines are likely a result of conversion of native grasslands to cropland, as well as overhunting. Although the curlew is no longer hunted, loss of breeding habitat continues. It may be susceptible to reduced habitat quality caused by drought, and slow population growth may limit its recovery rate following these drought-related declines. Additional concerns include the impacts of predation, human disturbance, and possibly pesticide use on grasshoppers (the bird's main food supply).

Management

The long-billed curlew and its nests in North America are protected under the *Migratory Birds Convention Act* of 1917.

Conservation and management of the long-billed curlew in Alberta focuses on the maintenance of its remaining breeding habitat. Several management initiatives (i.e., Operation Grassland Community, The Prairie Conservation Action Plan and the North American Waterfowl Management Plan) aim to protect the native grassland habitat that the curlew requires for survival. Federal and provincial agricultural agencies are also implementing soil conservation programs to convert cultivated areas back to grasslands.

Despite historical declines, there has been very little research conducted on this species. In 2001, an inventory was conducted to estimate the provincial population size, and collect information to understand better curlew preferences for habitat. The Endangered Species Conservation Committee has recommended that programs to collect information on the population size, distribution, and trend of the long-billed curlew in Alberta be enhanced, and the status of this species be reassessed within the next five years. Research is also needed to determine the impacts of future droughts, various grazing practices, pesticide use and habitat fragmentation on populations and breeding success in Alberta. A long-term banding study has also been recommended to provide information on territory and mate fidelity, sex ratios, juvenile dispersal patterns and population structure.

DESCRIPTION

The long-billed curlew is the largest shorebird in North America. Its long, downward-curved bill is used to capture insects such as grasshoppers and beetles. Both sexes have a distinctively small, beige head with a long neck faintly streaked with darker brown, a white eye ring, a buff brown chest, a brown rump, a striped tail, and a dark back with pale edges.

STATUS

Alberta - Species of Special Concern; recommended in 2000

Saskatchewan – May Be At Risk (Recommended as Species of Special Concern)

Manitoba - Extirpated

British Columbia -Sensitive

Canada (COSEWIC) - Special Concern in Alberta, British Columbia and Saskatchewan

U.S. - Extirpated from several states and considered rare in most northern Great Plains states

WAYNE LYNCH

DESCRIPTION

The loggerhead shrike is a medium-sized songbird (slightly smaller than a robin) that is grey above and white below, and has a black "mask" through its eyes. Shrikes are the only truly predatory songbirds, eating both insects and small vertebrates such as mice, voles, juvenile ground squirrels and other birds. Since the loggerhead shrike does not have the powerful raptorial feet used by larger predatory birds to handle live prey, it typically uses sharp twigs, thorns and barbed wire to impale its prey. This behaviour has given rise to the nickname "butcher bird." The loggerhead shrike also has a strong hooked bill, which it uses to tear its impaled prey into bite-sized pieces.

LOGGERHEAD SHRIKE *(Lanius ludovicianus)*

Population and Distribution

Over the past 40 years, the loggerhead shrike's range has become smaller and shifted southward because of habitat changes. The species has disappeared from most of eastern Canada and its distribution is now patchier in the north-central and southeastern United States. On the Canadian prairies, loggerhead shrike populations are comparatively more abundant locally despite a similar southward shrinking of the breeding range. The loggerhead shrike currently breeds from southern Alberta, Saskatchewan and Manitoba, south to Mexico, and winters from Kansas to Mexico.

The Alberta breeding range has also become smaller and shifted southward and loggerhead shrike numbers have declined. However, the rate of this decline has slowed, and the population appears to have stabilized in the last decade. Today, at least 3000 pairs of loggerhead shrikes are found in Alberta, mainly in the Grassland Natural Region.

Habitat

The loggerhead shrike requires a combination of open, grazed areas adjacent to nesting and perching sites, and dense ungrazed vegetation that provides habitat for potential prey. Abandoned farmsteads, roadsides, shelterbelts and railway rights-of-way provide suitable habitat. Dense shrubs are used for nesting—usually thorny buffaloberry, common caragana or willows, and occasionally Manitoba maple and poplar.

Threats

Habitat loss and fragmentation on the breeding grounds pose the greatest threats to the loggerhead shrike. Intensive agricultural practices have converted native grassland with shrubs and shelterbelts to cultivated fields, resulting in the loss of suitable breeding and wintering habitats. Other threats include pesticide contamination, mortality on the wintering grounds, climate change, increased predation upon shrikes near roadsides and fencerows, increased competition with similar species, and human-caused disturbance while nesting.

Management

The loggerhead shrike is protected under the *Migratory Birds Convention Act* of 1917, which fulfilled a 1916 treaty between Canada and the United States. Under Alberta's *Wildlife Act*, it is illegal to kill the loggerhead shrike or disturb it or its nest at any time of the year in this province.

Many shrike research projects were conducted in Alberta during the 1990s, including investigations of habitat use, breeding ecology, and sampling and population estimation techniques. Planning at the landscape level, habitat retention and enhancement programs, and education are currently used to minimize population declines. Prairie and eastern recovery teams meet yearly in Canada to monitor progress, coordinate research and develop management strategies for loggerhead shrike recovery.

Fortunately, there is still time to ensure that viable populations of the loggerhead shrike are maintained in Alberta. In 2000, the Endangered Species Conservation Committee recommended the enhancement of programs and integrated wildlife surveys in the grassland region in order to help collect information on the population size, distribution, and trend of the loggerhead shrike in Alberta. The status of this species will be reassessed within five years.

STATUS

Alberta: Species of Special Concern; recommended in 2002

Saskatchewan: Sensitive

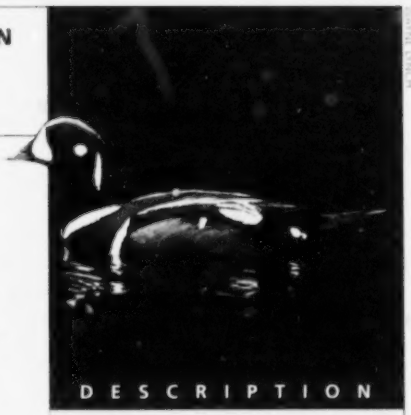
Manitoba, Ontario, Quebec, New Brunswick: At Risk

British Columbia, Nova Scotia, Prince Edward Island: Accidental

Canada (COSEWIC): Threatened in Alberta, Saskatchewan and Manitoba since 1986. Eastern Canadian population (Ontario and Quebec) listed as Endangered since 1991.

U.S.: Nationally listed as Apparently Secure. Extirpated from several northeastern states, Endangered in several others. Special Concern in most northwestern states.

HARLEQUIN DUCK (*Histrionicus histrionicus*)



DESCRIPTION

The harlequin duck is a small, subarctic sea duck that is known for the male's colourful plumage. The male has a slate-blue body, with a dark blue-brown belly, chestnut sides and streaks of white on the head and body. The head is dark, and the crown has a black stripe with a chestnut stripe on either side. Distinguishing characteristics are the white crescent in front of the eye and a white patch near the ear. The female is plainer, with dark brown body plumage, a white belly, and white patches behind, below and in front of the eye.

Distribution and Habitat

The harlequin duck has a Holarctic distribution, and populations are found along both the Pacific and Atlantic coasts of North America. The harlequin duck spends 8 to 10 months of the year in rocky coastal habitats and only migrates inland during the summer to nest. It arrives in Alberta in late April or early May and nests along swiftly flowing, clear mountain streams that are removed from human disturbance and have adequate nesting cover on islands or along the banks to conceal nests. The harlequin duck demonstrates a close association with very specific habitat and stream quality characteristics in its breeding habitat, and pairs will often return to the same area each year. The narrow habitat requirements of the species restrict its breeding range to the mountains and foothills in Alberta.

Population

The harlequin duck exists at low densities in Alberta and is unevenly distributed in relatively inaccessible watersheds, making it difficult to accurately estimate populations. Expert opinion on the size of the breeding population varies widely, with estimates as low as 1000 and as high as 3000, and trends cannot generally be assessed because of a lack of historical data. Where information is available, populations appear to have been stable over the last four to five years. However, western populations as a whole are believed to be of special management concern, because of the species' life history characteristics, breeding habitat requirements and sensitivity to human disturbance.

Threats

The harlequin duck lives for a relatively long time and its life history characteristics tend to make it more vulnerable to human disturbance. The harlequin duck has a relatively low population size, begins breeding at a late age (two to five years) and may not breed every year, resulting in low annual productivity. It has specific breeding habitat requirements within a small geographical range, and appear to be sensitive to human disturbance such as recreational activities that are concentrated near the shoreline, and development that alters the characteristics or water quality of streams. The harlequin duck is subject to similar threats on its wintering grounds, where large numbers are concentrated in a small area.

Management

A lack of information on the biology of the harlequin duck has made management of this species uncertain in the past, but research is now providing a basis for evaluation and management of these ducks. Until recently, the harlequin was simply managed as a migratory game bird, although waterfowl hunting does not generally occur within its range in Alberta. Regional inventories and research initiatives have led to restrictions on recreational boating and rafting on a number of streams and rivers in Alberta, potential site-specific mitigation for the effects of mining, and monitoring programs to evaluate population response.

STATUS

Alberta: Special Concern; recommended in 2002

British Columbia: Sensitive

Saskatchewan, Manitoba: Accidental

Northwest Territories, Nunavut: May Be At Risk

Yukon Territory: Secure

Canada (COSEWIC): Special Concern (eastern population; NU and QC east)

U.S.: Apparently secure (N4B, N4N)

BULL TROUT *(Salvelinus confluentus)*

DESCRIPTION

The bull trout, not really a true trout, is actually a char species with a relatively large head and jaw from which the term "bull" originated. This species has a slightly forked tail and is typically olive-green to blue-grey in colour, although lake-dwelling bull trout can have silvery sides. Along its sides and back are pale yellow, orange, pink or red spots. The bull trout can reach lengths of 30 to 80 cm, and weights of up to 10 kg.

The bull trout can be distinguished from other char and trout in Alberta by the absence of black spots or markings on its dorsal fin. Especially as a juvenile, this species is often misidentified and so the bull trout angling slogan "No black, put it back!" is very helpful.

Population and Distribution

Before the early 1900s, the bull trout was found throughout the mountains and foothills of western North America. Today, the bull trout remains (but in lower numbers) in Alberta, southeastern Yukon, interior British Columbia, and south into Washington, Oregon, Idaho and eastern Montana.

The bull trout was once common in all of Alberta's major river systems flowing from the Eastern Slopes of the Rocky Mountains, including parkland and prairie regions. Over the past 50 years, several populations have declined or have been extirpated, especially in southern Alberta. Today, the bull trout is found mainly in the upper reaches of Alberta's Eastern Slopes, occupying about 20 000 km of stream habitat, and 12 000 ha of lake habitat in 24 lakes.

Habitat

The bull trout is a cold-water species, found in both deeper pools and slower backwaters in well-connected mountain lakes and streams. Adults can be migratory or nonmigratory. For spawning, the bull trout needs small rivers or groundwater-fed streams with steady winter flows, spring flooding, and clean gravel areas.

Threats

Illegal harvest resulting from misidentification and poaching may be preventing the recovery of some of Alberta's bull trout populations. Other threats include migratory barriers that prevent spawning or reduce genetic exchange between populations (e.g., dams, weirs and hanging road culverts), and habitat degradation and fragmentation (e.g., from cutblocks or fires). Competition and hybridization with exotic, introduced species (mostly another char–brook trout) are also threats.

Management

Information and education programs, strict enforcement of fishing and environmental regulations, and the protection and conservation of bull trout habitat will help Alberta's bull trout populations recover. In 1994, *Alberta's Bull Trout Management and Recovery Plan* was produced. Zero bag limits, implemented in 1995, and closures of spawning grounds have led to increases in some bull trout populations. Knowledge of the bull trout's biology is still limited, and population surveys, long-term monitoring programs, and genetic studies are required.

In response to a recommendation from the Endangered Species Conservation Committee (ESCC), the Minister directed that a revised conservation and management plan for the bull trout should be prepared. The committee advised that this plan should identify programs and resources needed for the documentation of population size and trends, as well as the current extent of habitat fragmentation. Other recommendations were to identify programs and resources necessary to assess the efficacy of current management strategies, and to develop and implement programs that restore habitat, resolve current bull trout conservation issues and prevent future negative impacts to the species. The ESCC also recommended that the conservation needs of natural bull trout stocks be addressed in government land use decisions and approvals.

STATUS

Alberta: Species of Special Concern; recommended in 2002
British Columbia, Yukon: Sensitive
Northwest Territories: May Be At Risk
Canada (COSEWIC): Not yet assessed; National General Status is Sensitive
U.S.: Nationally listed as Vulnerable; Idaho, Montana, Oregon and Washington -Vulnerable; Nevada - Critically Imperiled; Alaska – Uncertain; California – Extirpated.

WOLVERINE (*Gulo gulo*)

Population and Distribution

Since the early 1900s, the circumboreal distribution of the wolverine has dwindled considerably, especially in the eastern and southern portions of its range. The wolverine was once found in the northern United States and across Canada, except in Newfoundland, Nova Scotia and southwestern Ontario. However, it has since been extirpated from large areas of southern and eastern Canada. Wolverine populations and ranges have also decreased in northern and western Canada, although the extent to which this has occurred is unknown.

Historically found across Alberta, the wolverine is now restricted to the northern half of the province and along the mountains and foothills, where it has a wide distribution but a low population density. The Alberta population is roughly estimated at fewer than 1000 breeding individuals and is considered to be declining at an unknown rate.

Habitat

Despite its shrinking range, the wolverine is still found in a diversity of ecozones, including the boreal forest, tundra and subalpine regions. The wolverine tends to be found in fairly remote habitats not associated with human development, and sometimes avoids large open areas such as recent cutblocks. Generally, wolverine density and use of habitats is influenced more strongly by food availability than by specific habitat characteristics.

Threats

Habitat loss caused by human settlement, logging, mining, oil and gas activities and recreational development has reduced the wolverine's range and increased mortality. Other threats include activities that reduce the amount of ungulate carrion available during the winter, predator- and rabies-control programs, and trapping and hunting. The wolverine has a low population density and, as is true for most large carnivores, its reproductive potential is naturally low. As a result, the trapping of only a few individuals has a large potential to affect negatively the reproductive success of the population, and recovery from any population decline will be slow.

Management

The wolverine is protected as a "fur-bearing animal" under Alberta's *Wildlife Act*, and the circumstances under which it can be harvested or controlled are specified.

The limited amount of information on Alberta's wolverine populations makes it difficult to assess the species' provincial status and to determine the impact of potential threats on local populations. Alberta has initiated the development of population trend and inventory protocols for the wolverine. After these protocols are completed, management activities other than harvest regulations will be evaluated.

Alberta's Endangered Species Conservation Committee has recommended that trapping should be allowed to continue for now, in order to facilitate additional research through collection of carcasses, but that provincial trapping regulations should be reviewed after two years. Other recommendations include involving trappers in research, investigating models that project future changes in wolverine habitat, and incorporating consideration of the wolverine in land-use guidelines and environmental impact assessments.

DESCRIPTION

Both scavenger and cunning predator, the wolverine is a solitary, medium-sized carnivore that is also called "glutton," "carcajou (evil one)," or "skunk bear." As the largest member of the weasel family, the wolverine can be up to 125 cm in length, with males ranging from 11.3 kg to16.2 kg and females ranging from 6.6 kg to 14.8 kg in weight. The wolverine defends its food aggressively against wolves and bears by using its muscular body, razor-sharp teeth and strong jaws, and by covering food with foul-smelling secretions from its anal gland. The wolverine's dense, chocolate-brown coat usually has two buff stripes that run along the flanks and join at the base of a large, bushy tail.

STATUS

Alberta: Data Deficient; recommended in 2001

British Columbia, Saskatchewan, Manitoba, Yukon, Nunavut: Sensitive

Northwest Territories: Secure

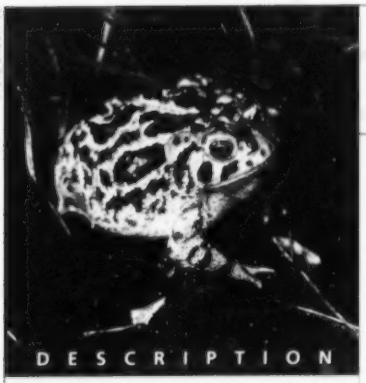
Ontario: May Be At Risk

Quebec, Labrador: At Risk

New Brunswick: Extirpated

Canada (COSEWIC): Eastern population is Endangered; western and northern populations are Vulnerable (1989)

U.S.: Nationally listed as Apparently Secure (N4)



DESCRIPTION

D A T A D E F I C I E N T

GREAT PLAINS TOAD (*Bufo cognatus*)

The Great Plains toad is a moderately large toad, ranging in length from 45 mm to 114 mm. It is covered in large, dark green blotches that are on a background of pale brown-grey or olive, and are sometimes symmetrical on each side of the back. Scattered warts, each less than 1 mm in diameter, occur on the Great Plains toad's back. Two heavy, well-developed cranial ridges that form an "L" shape around each eye and join to form a bump between the eyes can easily be used to distinguish the Great Plains toad from the similar-looking Canadian toad.

The Great Plains toad is generally nocturnal, and is active in Alberta from late April to September. After spring or summer rains, adults congregate at breeding ponds and males begin calling for mates, most often after sunset. One female toad may lay up to 20 000 eggs in long, gelatinous strings that are attached to debris near the bottom of the pool.

Distribution and Population

The Great Plains toad is found throughout an extensive area in western North America and the northern half of Mexico. In Alberta, it inhabits the extreme southeastern grasslands, although the exact distribution in province is not known. A large portion of the Alberta population lives north of Medicine Hat in the Canadian Forces Base Suffield and in the proposed Suffield National Wildlife Area.

As a result of loss of native grassland, the Alberta population is fragmented, inhabiting four main areas with little, if any, interaction or genetic exchange between population clusters. This isolation is a concern because each population is then susceptible to potentially devastating events such as extended drought or habitat loss.

An accurate estimate of population size has been difficult to obtain because of a lack of long-term monitoring. Estimates of the Alberta population size vary considerably, ranging from as low as 1000-2000 individuals to as high as many tens of thousands. It is difficult to distinguish between actual declines and fluctuations related to annual rainfall.

Habitat

The Great Plains toad is an efficient digger, preferring grassland habitats with loose soil that allow it to burrow to avoid dry conditions in summer and to hibernate during winter. Breeding ponds are most often temporary, shallow ponds or ditches, with fresh, clear water, although permanent wetlands may be important during drought periods.

Threats

Conversion of native grasslands to cropland, as well as local impacts from grazing, may slowly be diminishing the quantity and quality of habitat for the Great Plains toad in Alberta. Wetland loss and alteration has also reduced available breeding habitat. Drought, predation, hydrological changes, road mortality and activities associated with the oil and gas industry also threaten the long-term existence of the Great Plains toad in Alberta.

Management

Under Alberta's *Wildlife Act*, the Great Plains toad is designated as a "non-game animal." It cannot be killed for any reason, nor can it be bought or sold, and a permit is required for possessing it for educational or scientific uses.

The Endangered Species Conservation Committee has recommended that the status of the Great Plains toad be "Data Deficient" because there is insufficient information on this species to accurately assess its status in Alberta. Reliable information is needed on distribution, population size and fluctuations, and, in particular, population trends for this species. Regular monitoring of population levels is also required to assess the impacts of factors such as habitat loss and alteration, drought, road mortality and industrial development. Volunteers with the Alberta Amphibian Monitoring Program may provide support for this regular monitoring.

STATUS

Alberta: Data Deficient; recommended in 2001
Saskatchewan: Sensitive
Manitoba: Threatened
Canada (COSEWIC): Special Concern
U.S.: Nationally listed as Secure

CANADIAN TOAD (*Bufo hemiophrys*)

Distribution and Habitat

The Canadian toad inhabits the prairie, aspen parkland and boreal forest regions of Alberta, Saskatchewan, Manitoba and the Northwest Territories. Its distribution extends into the United States, along the Canadian border to western Minnesota and northeastern South Dakota. Within Alberta, the Canadian toad occupies roughly the eastern half of the province.

It is generally found in river valleys or along lakes with sandy borders. Although wetlands are required for breeding, much of the year is spent in adjacent uplands. Areas with sandy soil where individuals can burrow to avoid freezing are important for winter hibernation. Overwintering areas, called hibernacula, can be several hundred metres from ponds and may contain large concentrations of toads. Because of this fact, entire subpopulations of the Canadian toad are susceptible to forest harvest and construction activities during the nonbreeding season.

Population

The Canadian toad was common and its population was stable in Alberta until the mid-1980s. The population has since declined, especially in northern parts of the prairie and parkland regions, and the toad may no longer be found in areas of Alberta south of Medicine Hat. The remaining population is small and appears to be declining, but since historical information on population size is limited, accurate estimates of the population size and rate of decline are unavailable.

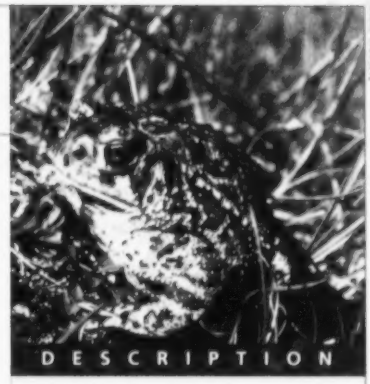
Threats

Threats to Alberta's Canadian toad population include disturbance to hibernacula (e.g., construction activities), wetland loss and alteration, forest harvest, climate change and disease. More than 90% of wetlands in prairie and parkland areas have been drained or modified for agriculture, 60% of which has occurred in the last 50 years. The greatest modifications have taken place in the grasslands and the parkland, the areas in which Canadian toads have declined.

Management

Under Alberta's *Wildlife Act*, the Canadian toad is currently designated as a "non-game animal." This means that it cannot be killed for any reason, cannot be bought or sold, and a permit is required to possess this species for educational or scientific purposes.

The Endangered Species Conservation Committee has recommended that the status of the Canadian toad be "Data Deficient" because there is insufficient information on this species to accurately assess its status in Alberta. It has also recommended that the Alberta government facilitate the collection of better information on the population size, distribution and trends of the Canadian toad, and that the status of the species in the province be reassessed within five years. This research is needed to determine the impacts of threats to toad populations, and to gain a more complete understanding of the biology of this species. The current volunteer network of the Alberta Amphibian Monitoring Program may provide support for this task.



DESCRIPTION

The Canadian toad is the smallest true toad in Alberta. It ranges in length from 3 cm to 7.5 cm, with the males usually smaller than the females. Like all true toads, the Canadian toad has a stout body, and its skin is mottled with grey-green or brownish blotches with irregular brownish-red, toxin-producing warts. The Canadian toad is most often brown or grey-green in colour. However, it can also be rusty or red-coloured. Its underside is whitish and spotted with grey. It has two ridges along the top of its head that are either parallel or joined to form a raised bump between its eyes.

The Canadian toad is active from April to September in Alberta. It is mainly seen during the day, stalking and preying upon earthworms, beetles, and ants with its long, sticky tongue. At night it generally burrows into the ground for cover. However, if the evening is warm enough, it may also be active at night.

STATUS

Alberta: Data Deficient; recommended in 2001

Saskatchewan, Manitoba: Secure

Northwest Territories: May Be At Risk

Canada: Not yet assessed; National General Status is Sensitive

U.S. – Unranked/Not yet assessed (N?)

PYGMY WHITEFISH (*Prosopium coulteri*)

COURTESY JASPER NATIONAL PARK

DESCRIPTION

The pygmy whitefish is a small (generally less than 15 cm in length), slim fish with relatively large scales, a blunt snout, very prominent eyes and an almost cylindrical body. During fall spawning, both sexes develop bumps on the head, back, sides and pectoral fins, and the ventral fins become orange. The pygmy whitefish is easily misidentified as young of the mountain whitefish because of its small adult size and similar markings.

Distribution and Habitat

The pygmy whitefish has a wide but disjunct distribution in northern North America, ranging from the Columbia basin in the northwestern United States through British Columbia, Alaska and the territories. It is also found in the Saskatchewan portion of Lake Athabasca and in Lake Superior, but is known from only two watersheds in Alberta: Waterton Lake and parts of the Athabasca River drainage upstream from Whitecourt. Pygmy whitefish are typically found in relatively cold, fast mountain streams and the lower parts of deep, cold lakes, removed from human disturbance. Cold Lake (which has been well sampled) and the Alberta portion of Lake Athabasca may provide suitable habitat, but there are no records of pygmy whitefish from these areas. Alberta stocks of pygmy whitefish may be genetically distinct from those in the rest of Canada.

Population

There is insufficient information on pygmy whitefish in Alberta to determine either population size or trends. However, throughout their range, pygmy whitefish are rarely common. Only eight specimens have been collected in Alberta: two from Waterton Lake and six from four different locations in the upper Athabasca River as far downstream as Whitecourt. The populations in these two watersheds appear to be small, and are isolated from one another. The population in the Athabasca River appears to be viable, but the habitat quality in this watershed may decline in the future, potentially affecting the pygmy whitefish.

Threats

Although pygmy whitefish in Waterton Lake are relatively isolated from human disturbance by their location and deep-water habitat, both Alberta populations have been subjected to natural and human-induced threats. Stocking of non-native fish has occurred in both Waterton Lake and parts of the Athabasca River, and the ability of the pygmy whitefish to compete with mountain whitefish may be a limiting factor in rivers. Warmer water temperatures since the last ice age may exacerbate this competition in lakes, as other species begin to move into the same deep-water habitat as the pygmy whitefish.

The Waterton Lake population is in a national park and is relatively secure, but the Athabasca River population may be at risk of regional extinction as a result of low population numbers, competition with other species, and habitat degradation from development and recreational activities such as off-road vehicles. Industrial developments in the Athabasca watershed increase sedimentation and reduce canopy cover, and industrial and domestic wastes degrade water quality.

Management

The pygmy whitefish falls under the general protection of the *Fisheries Act* in Canada, and there have been no special management efforts for this species in Alberta to date. The low population size and restricted distribution of the pygmy whitefish in Alberta suggest that this species may be in need of specific protection, but more research is required into its biology, habitat requirements, distribution, limiting factors and status. In particular, more information is needed on the Athabasca River population and to determine whether pygmy whitefish live in the Alberta portion of Lake Athabasca.

STATUS

Alberta: Data Deficient; recommended in 2001
British Columbia: Secure
Yukon, Ontario: Undetermined
Canada (COSEWIC): Not assessed
U.S.: Apparently Secure (N4); designated as Imperiled in Idaho, Washington and Wisconsin; Apparently Secure in Alaska, Michigan and Montana

WESTERN SPIDERWORT (*Tradescantia occidentalis*)

DESCRIPTION

Western spiderwort is a perennial flowering plant with a slender stem measuring 10 cm to 50 cm in height. The leaves are linear, extend from 10 cm to 30 cm in length, and are folded lengthwise. The flowers, which usually appear in early July, have rose to dark blue petals (10-15 mm long) arranged in groups of three. Although the flowers grow in clusters, just one blossom opens at a time and each blossom lasts only one day. The plant spreads through the production of seeds, and also through the development of roots on the stem.

Western spiderwort's unusual name comes from the soft, stringy material that can be pulled from the broken ends of the stem. After exposure to air, this material hardens into a thread that appears similar to a cobweb.

Distribution and Habitat

In Alberta, western spiderwort is found in only one small area (2 km²) in the southeastern corner of the province–the Pakowki Lake sand hills. This area is part of the Dry Mixedgrass Subregion of the Grassland Natural Region. Western spiderwort often grows in sparsely vegetated sand dune areas that have active (drifting) sand, close to drought-resistant grasses, shrubs and trees.

In Canada, western spiderwort is at the northern limit of its range. Besides Alberta, it is found at one isolated location in southern Saskatchewan and at three sites in southwestern Manitoba. Only the Manitoba populations are connected with the plant's main distribution throughout the central United States.

Population

The size of Alberta's western spiderwort population varies from year to year, depending on moisture levels. This makes a population trend difficult to determine. For example, the population was estimated at 7450 plants in 2002 and 210 plants were recorded in 1990, both very wet years, whereas only 30 plants were found in 1987 and 27 in 1999, both dry years. In 2001, an exceptionally dry year, about 20 plants were found.

Threats

Active sand dunes are becoming rare in Alberta because of a lack of natural prairie wildfires and large mammals such as plains bison, which historically hindered vegetation from growing in these sandy areas. The active sand dune area at Pakowki Lake has decreased, likely as a result of these factors, and possibly climatic factors. However, the exact cause is unclear. Low to moderate cattle grazing on the Pakowki Lake site has a limited impact and may even prevent revegetation of the dunes, but overgrazing is harmful. This presents a management dilemma, as the positive or negative effects of grazing and fire control at various times of the year are unknown. Potential invasion of leafy spurge (*Euphorbia esula*) is also a threat.

Management

In 1997, Alberta's *Wildlife Act* was amended to allow designation, protection and recovery of "Threatened" and "Endangered" plants. Both a national and a provincial recovery plan are currently being developed for western spiderwort. Within one year of the listing of this species, a provincial recovery team, including Alberta Sustainable Resource Development and other stakeholders, will prepare a recovery plan to guide the management of western spiderwort over the next five years. Since the rest of the North American population appears healthy, initial recovery efforts for this species will likely focus on the identification and conservation of the existing population(s), rather than the creation or reintroduction of new populations. Protection of all western spiderwort populations should be implemented. Research should be initiated on the plant's population dynamics and genetics, as well as the effects of grazing and fire control at various times of the year.

STATUS

Alberta: In process (recommended in 2001 as Endangered)

Saskatchewan: Endangered

Manitoba: Threatened

Canada (COSEWIC): Threatened

U.S.: Likely Secure

DESCRIPTION

Soapweed is a long-lived perennial flowering plant that forms clusters of stiff, sharply pointed leaves. Each rosette of leaves can produce a single flowering stalk, 30 to 70 cm tall, with 15 to 70 white flowers (some may have a pink blush) in June and/or July in Alberta. The soapweed is pollinated only by the yucca moth. The yucca moth is white and has a wingspan of 18 to 27 mm. The moth's unique mouthparts, called maxillary tentacles, are used to pollinate soapweed flowers.

The soapweed and yucca moth engage in a relationship called "mutualism" that is beneficial for both partners. The yucca moth pollinates soapweed flowers, in which it also lays its eggs. Then moth larvae feed on a small proportion of the seeds in the developing yucca fruit. Each species depends on the other for survival and reproduction, and can only persist in places where both can survive.

I N P R O C E S S

SOAPWEED (*Yucca glauca*) and THE YUCCA MOTH (*Tegeticula yuccasella*)

Distribution

The soapweed and yucca moth are at the northern edge of their ranges in Alberta. Healthy populations exist farther south in the western United States. The moth has a larger distribution than the plant and pollinates several other yucca species from the eastern seaboard of North America to the Rocky Mountains. Populations of soapweed and yucca moths in Canada are isolated from the nearest southerly populations by 200 km.

Population and Habitat

The soapweed grows on south-facing, eroded coulee slopes in southeastern Alberta, where it coexists with the yucca moth. The plant and moth are found in two locations in the Dry Mixedgrass Subregion near the Milk and Lost rivers. These two populations occupy an area of less than 1 km^2, an extremely limited distribution. Native populations of these species are not confirmed to occur elsewhere in Canada, although other locations are known where the plant has likely been transplanted.

One of the two Alberta soapweed populations has not produced seed in recent years because the flowering stalks of the plants have been eaten and the moths are in low numbers. The moths have almost been eliminated from the population, and it is predicted that without intervention soapweed will be extirpated from this site within 50 to100 years. The other population is more secure due to its larger size, but experiences high variation in flowering levels and moth densities, and produces next to no fruit in some years.

Threats

The greatest natural threat to these species is the potential loss of their partner species. Soapweed cannot produce seed if yucca moths are not present, and moth larvae cannot survive if there are no seeds to eat. Soapweed is also susceptible to browsing by pronghorn and mule deer in certain locations or years when there are few flowering stalks. Other threats include use of agricultural herbicides and pesticides, and horticultural and medicinal collection.

Management

There are currently no recovery plans for the soapweed or yucca moth in Alberta or Canada. Within one year of their listing, a joint provincial recovery team, including Alberta Sustainable Resource Development and other stakeholders, will prepare a recovery plan to set goals, objectives, strategies, and actions to guide management of existing native populations of both species over the next five years.

Since the overall North American population appears healthy, initial recovery efforts for these species will likely focus on the identification and conservation of existing populations, rather than on reintroduction. All soapweed sites should be protected to prevent losses from industrial, agricultural, recreational or plant collection activities. Ongoing research by scientists will continue to assess the unique survival strategies exhibited by both species considering the highly variable conditions found at the northern edge of their range. These findings will be used as a guide for suitable management practices.

STATUS

Alberta: Both species in process (recommended in 2003 as Endangered)

Saskatchewan: Soapweed is listed as Exotic; yucca moth - no ranking

Canada (COSEWIC): Soapweed - Threatened, uplisted from Vulnerable in 2000; yucca moth - Endangered

U.S.: Soapweed – Nationally listed as Secure; Arkansas, Colorado, Kansas, Montana, Nebraska, New Mexico, Oklahoma, North Dakota, South Dakota, Texas – Reported; Iowa – Vulnerable; Missouri - Imperiled, Wyoming – Apparently Secure; yucca moth – not listed

I N P R O C E S S

ALBERTA'S GRIZZLY BEAR (*Ursus arctos*)

Distribution and Population

The grizzly bear once ranged from the Pacific Ocean to Hudson Bay and the Mississippi River, and from the Arctic Ocean to central Mexico. Extensive human settlement, conversion of land to agriculture and unrestricted hunting in the 1870s led to a major range reduction in its population size. The grizzly bear is now restricted to Alaska and the Canadian territories, remote areas of British Columbia and the northwestern United States, the Canadian Rockies and western Alberta.

Estimating population size for the grizzly bear is very difficult, because it exists at low population densities, is inactive during the winter, and tends to live in remote areas of forested habitat. Based on the best available data, the Scientific Subcommittee believes there are fewer than 1000 mature grizzlies in Alberta.

Habitat

The grizzly bear occupies a variety of natural regions in western Alberta, including boreal mixedwood, foothills, montane, subalpine and alpine habitats. Lower elevation valley bottoms and riparian corridors, especially those in montane areas, support the highest diversity and productivity of food habitat for grizzly bears. Alpine meadows and avalanche slopes also provide the variety of habitats required.

A grizzly requires a large home range to ensure sufficient and varied food sources, as well as secure den sites, and to improve its chances of finding mates. Its habitat choices are generally closely correlated with the location of high quality seasonal food sources, which are generally away from human disturbance.

Threats

The grizzly bear is a sensitive species. It has a low reproductive potential because of a late age of first reproduction (4 to 8 years of age), small litters (average of 1.6-2.2 young), and long periods between litters (3 to 5 years). Consequently, the species has a limited ability to recover from population declines. The grizzly bear also has relatively low dispersal capabilities. This limits the grizzly's ability to expand its range into suitable habitat that may become available. Today, the most serious threats to grizzly bear populations in Alberta are human-caused mortality, and habitat loss and fragmentation.

Management

The grizzly bear is currently designated under Alberta's *Wildlife Act* as a "Big Game Species," and has the provincial general status rank of *May Be At Risk*. Its legal designation is under review. The Endangered Species Conservation Committee has recommended that the grizzly bear be listed as *Threatened* because of the small size of the breeding population, restricted dispersal from adjacent jurisdictions and the expectation that current and future land use and human activity will lead to declines. A provincial recovery team has been formed and recovery planning is underway.

Several regional initiatives and strategies, which involve a wide range of public and private stakeholders, have been established to address the management of Alberta's grizzly bear.

DESCRIPTION

The grizzly bear is most commonly blonde to dark brown, but can range in colour from light gold to nearly black. Its fur is often white-tipped, especially around the face and shoulders, giving the bear its grizzled appearance. This is a large bear, with an adult male averaging 1.8 m in length and weighing 180 kg on average (weight can vary by 25% or more between spring and fall), but up to 325 kg or more. The female is about two-thirds the size of the male. The grizzly bear can be distinguished from the black bear by its concave-shaped face, rounded ears, extremely long front claws (nearly 10 cm) and a prominent hump of muscle on its shoulders that is the highest point of its profile.

STATUS

Alberta: In process (recommended in 2002 as Threatened)
Saskatchewan: Extirpated
Manitoba: Extirpated
British Columbia: Sensitive
Northwest Territories. Sensitive
Yukon Territory: Sensitive
Nunavut: Sensitive
Canada (COSEWIC). Extirpated (Prairie Population); Special Concern (Northwestern Population)
U.S.: Vulnerable/Apparently Secure (N3N4); designated as Threatened in Idaho, Montana, Washington and Wyoming, extirpated from several states, not yet assessed in Alaska

DESCRIPTION

IN PROCESS

CAPE MAY WARBLER (*Dendroica tigrina*)

The Cape May warbler is a medium-sized wood warbler (roughly 13 cm long; 10 g) that is highly secretive on its breeding grounds, tending to remain in the upper levels of the forest canopy. It has a yellow face, neck and belly, dark green upperparts, and a short tail. A chestnut ear patch, black-striped underparts and a large white wing patch distinguish the breeding male. The female is greyer overall and has two narrow white wing bars. The high-pitched, weak whistle of the Cape May warbler (*see-see-see-see*) is difficult to hear, and is easily confused with the songs of several other songbird species.

Distribution

The Cape May warbler is a neotropical migrant that winters primarily in the West Indies and along the east coast of Central America. It breeds throughout the boreal forest of Canada, arriving in Alberta in mid- to late May and migrating south in late August through late September. The warbler may be found in central and southern Alberta during its migration, but nests in the northern forests, close to the northern and western range limits of the species. The local distribution can be strongly influenced by outbreaks of spruce budworm, a major food item for the warbler.

Habitat

The Cape May warbler seems to demonstrate a consistently strong association with coniferous tree species in old (125+ years) forests, particularly those with spruce or fir canopies. Very tall spruce trees that extend above the rest of the forest canopy appear to be a requirement. The Cape May warbler avoids recently disturbed areas and is classified as a forest specialist. These factors severely limit the amount of suitable habitat available in Alberta.

Population

Researchers are just starting to study old-growth conifer stands in the boreal forest, and the Cape May warbler is a relatively uncommon songbird in Alberta. Therefore, there is limited information available on its distribution and abundance. Its rarity, uneven distribution and strong numerical response to outbreaks of spruce budworm and other insects make estimates of population size and trends difficult. Limited data from the Breeding Bird Survey indicate that the population in Canada has declined over the past few decades.

Threats

The main threat to the Cape May warbler is the loss and degradation of its breeding habitat because of resource extraction and agricultural expansion. Forestry activities cause habitat loss and fragmentation, particularly of older and coniferous-dominated forests. Short rotation lengths (time interval between successive harvests) and even-aged stand management do not allow forests to develop that are as old and as structurally varied as the Cape May warbler requires. Roads and seismic lines from oil and gas development often do not regenerate back to forest and may contribute to habitat loss as much as forestry. These impacts are worsened by habitat loss and alteration within this species' wintering range and along migration routes.

Management

There are currently no management efforts that target the Cape May warbler specifically. However, a few research projects in Alberta have recently focused on conifer-dominated habitats at both the stand and landscape levels. Large-scale surveys and long-term monitoring are needed to provide basic information on the distribution and abundance of this and other old growth-dependent songbird species. Modifications to current agricultural and resource extraction activities that eliminate the preferred habitat of the bay-breasted warbler will be critical to lessen their impact on this species.

STATUS

Alberta: In process (recommended in 2002 as Special Concern)
Saskatchewan: Sensitive
Manitoba through Newfoundland: Secure (Undetermined in Labrador)
British Columbia, Yukon Territory: At Risk
Northwest Territories: Undetermined
Canada (COSEWIC): Not assessed by COSEWIC; national general status is Secure
U.S.: Secure (breeding) – N5B

I N P R O C E S S

BAY-BREASTED WARBLER (*Dendroica castanea*)

Distribution

This neotropical migrant winters in Central and South America and breeds across the boreal forest of Canada and in the northeastern United States. It is found in Alberta's boreal forest and foothills, near the northern and western limits of its range. This warbler is rarely observed during its migration in Alberta, and is uncommon in most areas of the province. Therefore, little is known about its ecology. Individuals are known to arrive in Alberta in mid- to late May and leave for fall migration from mid-August through mid-September.

Habitat

Bay-breasted warblers appear to require old forest stands with canopies dominated by spruce or fir trees. Typical habitat for this species in Alberta is found in mixedwood stands of white spruce and aspen or balsam poplar, but pure coniferous and deciduous forest with conifer understorey can provide suitable habitat. Bay-breasted warblers have rarely been found in disturbed sites during the breeding season and are considered a forest specialist species. They usually nest in coniferous trees.

Population

The bay-breasted warbler is a relatively uncommon songbird in Alberta's forests, and there is limited information available on its overall distribution, abundance and habitat requirements. This species is also difficult to census, is locally distributed and tends to respond strongly to outbreaks of spruce budworm. Consequently, it is difficult to estimate population size and trends. Limited data from the Breeding Bird Survey suggest that Canadian populations of this warbler have declined over the last three decades, and numbers are expected to continue to decline in disturbed areas.

Threats

Habitat fragmentation and loss, primarily as a result of forestry, oil and gas development and agricultural expansion, threaten the breeding habitat of the bay-breasted warbler. Removal of older stands combined with short rotation lengths (time interval between successive harvests) tends to keep forests at younger stages of maturity. Exploration for oil and gas contributes to the loss of habitat and leads to fragmentation of the remaining forest by creating long-term linear disturbances such as roads and cutlines. This loss of habitat quantity and quality has been implicated in the population declines of neotropical songbirds across North America. Similar habitat change affects the wintering grounds of these species.

Management

There are no management activities specific to the bay-breasted warbler in Alberta, and detailed information on the population trend and habitat use is lacking. Existing research projects cover some of the types of forest used by this species, but long-term, large-scale studies across all appropriate habitats are needed to provide the information necessary for proper management of this and other old growth-dependent species. Modifications to resource extraction activities that currently affect the preferred habitat of the bay-breasted warbler will be critical to lessen their impact on this species.

DESCRIPTION

The bay-breasted warbler is a small (about 14 cm long; 13 g), secretive wood warbler that is difficult to spot and tends to remain in the mid- to upper levels of the forest canopy. The breeding male has a chestnut crown, throat and flanks, cream-coloured underparts, a black mask, a creamy patch on each side of the neck and two white wing bars. The female is duller, with only a faint chestnut cap. The extremely high-pitched, weak song (*seee-seese-seese-seee*) of this warbler is not distinctive and is difficult for some people to hear.

STATUS

Alberta: In process (recommended in 2002 as Special Concern)
Saskatchewan: Sensitive
Manitoba through Newfoundland: Secure (Undetermined in Labrador)
British Columbia, Yukon Territory: At Risk
Northwest Territories: Undetermined
Canada (COSEWIC): Not assessed by COSEWIC; national general status is Secure
U.S.: Secure (breeding) – N5B

A P P E N D I X

POLICY STATEMENT

for Alberta's Endangered Species Conservation Committee

Alberta's Endangered Species Conservation Committee (ESCC) is comprised of a balance of members from stakeholder groups representing resource-based land users, corporate and government land managers, conservation organizations and university scientists. Our mandate is to advise the Minister of Sustainable Resource Development on matters relating to the identification, conservation and recovery of species at risk in Alberta. We feel these principles are important in a provincial and federal context. We are operating from a core set of principles that include the following:

one | The identification, conservation and recovery of threatened and endangered species, as well as prevention of extinction of species, are shared values of this committee and Albertans in general.

two | The biological status of species should be determined by independent scientists using the best science available in an open and transparent process.

three | In accordance with the precautionary principle as stated in the *Accord for Protection of Species at Risk in Canada*, where the balance of scientific information indicates a species is at risk, conservation and protective measures will be taken.

four | Government has the responsibility to coordinate and facilitate the recovery of species. However, the success of a recovery plan depends on the knowledge and commitment of organizations and individuals who own, manage and use the land. Recovery teams must include these landowners/land managers.

five | Prevention and recovery programs for species at risk will be pursued by encouraging voluntary and cooperative, recovery and management efforts that cost-share on an equitable basis.

six | This committee encourages the elimination of any government policy disincentives to landowners to protect species at risk.

Alberta Agriculture, Food and Rural Development
www.agric.gov.ab.ca

Alberta Association of Municipal Districts and Counties
www.aamdc.com

Alberta Beef Producers
www.albertabeef.org

Alberta Conservation Association
www.gov.ab.ca/env/fw/aca.html

Alberta Sustainable Resource Development
www3.gov.ab.ca/srd

Alberta Fish and Game Association
www.afga.org

Alberta Forest Products Association
www.albertaforestproducts.ca

Alberta Irrigation Projects Association
www.aipa.org

Alberta Native Plant Council
www.anpc.ab.ca

Alberta Energy
www.energy.gov.ab.ca

Calgary Zoo
www.calgaryzoo.ab.ca

Canadian Association of Petroleum Producers
www.capp.ca

Federation of Alberta Naturalists
www.fanweb.ca

Special Areas Board
www.specialareas.ab.ca

The Wildlife Society - Alberta Chapter
www.albertadirectory.com/actws

Treaty 8 First Nations of Alberta

www.treaty8.org

University of Alberta
Dept. of Biological Sciences
www.biology.ualberta.ca

University of Calgary
Dept. of Biological Sciences
www.ucalgary.ca/UofC/faculties/SC/BI

Western Stock Growers' Association
www.cattle.ca/Cattle_Organizations/wsga-9w6

REPORT OF ALBERTA'S ENDANGERED SPECIES CONSERVATION COMMITTEE

JUNE 2002